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INSTITUTE OF HISTORY OF MEDICINE

HYDERABAD

MUSEUM GUIDE

PART - II (INDIAN MEDICINE)

Published for

THE CENTRAL COUNCIL FOR RESEARCH IN
INDIAN MEDICINE & HOMOEOPATHY
1971

மருத்துவப் பெரியார்
பண்டித. எஸ். எஸ். ஆனந்தம்
நூல் நிலையம், சென்னை.

Institute of History of Medicine: Hyderabad.

MUSEUM GUIDE

PART-II (INDIAN MEDICINE)

With Notes Compiled by
V. V. Ramana Rao

AND

Edited by
D. V. Subba Reddy.

Published for

THE CENTRAL COUNCIL FOR RESEARCH IN INDIAN MEDICINE & HOMOEOPATHY

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FOREWORD

Medical Science has been given a very high place in India from the earliest times. In fact, the Vedic concept of the Asvins as the divine physicians is matched only by a still greater attribute given to Rudra himself as the great physician of physicians: "bhiṣaktamam tvā bhiṣajām śruṇomi." As Vaidyanātha, this aspect of Siva continues during the medieval period as well even up to our own time. The nectar of life (amṛta) was only to overcome death, and even there, it is Dhanvantari, the great physician, who rises from the ocean with his pot of elixir of life. In India, "maṇi, mantra and oṣadhi" (potent gem, magical spell and healing herb) were the three that went together.

The greatest historical physician Jīvaka is known according to legend to have studied at Taxila, a great centre of every branch of learning. He was a contemporary of Buddha. Jīvaka is reputed to have healed Caṇḍa Pradyota of Ujjain of a chronic disease, and similarly, Buddha on various occasions. Jīvaka was a prince and a half brother of Ajātaśatru. Caraka and Suśruta who have left a great legacy of medical texts are almost deified in the medical world in India. With such traditions, our country offers a vast scope for research into the history of medicine. It is no wonder that Āyurveda and Unāni systems of medicine have held their own in spite of the great popularity of the modern European system which has gained ground all over.

Dr. D. V. Subba Reddy, who is himself a distinguished member of the medical profession of acknowledged competence in Allopathy, was drawn towards the fascinating subject of the history of Indian medicine for the last forty years. It is his enthusiasm that has created a magnificent Museum at Hyderabad for visually explaining this fascinating subject to

students and staff of Medical Colleges. The material he used as an aid to his lectures like charts, maps, and slides have formed the nucleus of the Museum that he created in the Institute of History of Medicine which came into being in Andhra Pradesh, first at Vishakhapatnam and subsequently, at Hyderabad. He has slowly built up with great care and devotion, a large Library of rare books on medicine in India against a background of medical science all over the world. He has been the guiding spirit of this Institute of History of Medicine, the Musem and the Library for several years now. For over thirty five years, I have known how selflessly Dr. Subba Reddy has worked to make this Institution an established one.

I am glad that a Guide to this Museum has been prepared by Mr. V. V. Ramana Rao under the guidance of Dr. Subba Reddy, to give a picture of medicine in India against the background of Medicine in the early Classical, Egyptian, Assyrian, Babylonian, Arabic and Medieval European periods. I have no doubt that this Museum will be visited by streams of seekers of knowledge and this guide would benefit them immensely. The illustrations that enliven the guide would also demonstrate visually a literary picture, otherwise not easily assimilated.

NATIONAL MUSEUM,
New Delhi.
November 16, 1971.

(C. Sivaramamurti)
Director.

INTRODUCTION

In the preface to the "Guide to the Museum; Part I, World Medicine" (1970) printed for the Indian Council of Medical Research, I drew attention to the increasing importance of the ro'e of the Museums of Medical History in the education of the medical profession, the administrator and the citizen. I expressed a regret for not publishing, at the same time, Part II of the Guide, describing the Indian Section of the Museum. I also narrated the circumstances that led to the organisation of this Museum and the general plan, namely, its two broad divisions; first "Medicine in the World" and second, "Medicine in India". I gave a detailed account of the first division-World Medicine. I briefly referred to the three broad sub - divisions of the Indian Medicine and the types of material available in some section.

In this preface, I would like to supplement what I wrote in Part I and explain in detail, the circumstances and manner in which I proceeded to build up my personal collection of pictures on History of Medicine in India, part of which, now adorns the Museum, along with the sculptures and paintings, specially prepared for this Museum, under my direction. The earliest exhibits I collected were in the late thirties from the galleries and publications of the Madras Museum. My frequent visits to Andhra University Library at Waltair also helped me to locate some source materials from monographs and reports of the Archaeological Survey of India and the texts of inscriptions from various learned publications and Journals. In Madras, in the late forties, the Archaeological Society of South India, Madras, by their invitation to me to give a lecture on "Archaeology and History of Medicine," further spurred me to explore all literature on the subject in the West. I searched for books and reports on archaeology, art, oriental studies, history and culture of India. I met or corresponded with many authorities in different branches of knowledge and persuaded some at the top, like Dr. Mortimer Wheeler, to send circulars to various Museums and Archaeological Departments, drawing attention to my requests for source material and exhibits. Need I add that I felt disappointed and depressed at the poor response to my letters and also to the circulars of the Heads of Departments.

I also realised the lack of necessary interest among the Medical Profession, the Archaeologists, and Museums, and the absence of agencies for collecting, cataloguing and conserving such source materials in India.

At this stage, my childhood love of Art, suppressed by the exigencies of medical services, surged up in my blood. The illustrations of medical scenes by famous masters of art, serially published in Organo-therapy by Messrs Carnick & Co., the fine artistic illustrations, old prints and paintings published by European Medical Journals and the pictures published and presented by the various foreign Pharmaceutical firms and the series of pictures on History of Medicine and Pharmacy, by modern artists, commissioned by Parke Davis and Company, attracted my attention. I also remembered the albums of Art and books on Artists that I studied in my college days and the books I purchased on art in London and Paris in the twenties. A re-reading and re-examination of these suggested, that as in the Renaissance period in Italy or later in the 16th and 17th Centuries in the rest of Europe, India needed the help of the artists to re-create the personalities and the scenes of ancient medical tradition. So, I planned to get prepared some panels and paintings based on the passages in Indian literature, religious or secular, in historical or purely literary works and plunged into a study of these source materials.

I need not go into the details of my failures to persuade some eminent artists to undertake this type of work as a labour of love or as a patriotic duty. Even advertisements in "The Hindu" with offers of reasonable prizes or remuneration, did not stimulate necessary responses. Then, I sought the help of School of Fine Arts in Vepery, Madras, to get some plaster of Paris replicas of sculptures in Museums and some paintings done by some of its alumnii, on a reasonable payment. I also made a search for artistic talent among the students and staff of the Madras Medical College and was happy to find some youngsters, who were prepared to co-operate with me in this work. In the early fifties, Mr. Krishnan produced fine copies of some line drawings of ancient teachers from old and rare printed volumes, for the Surgeons Hall of Fame in Chicago and Mr. Thambuswamy did some paintings for the cover pages of the Souvenirs

of the Medical exhibitions of Madras Medical College. About this time, Professor Henry E. Sigerist, who was writing the 8 volume History of Medicine for Oxford University Press had asked me for pictures to illustrate the section on India and I was eager to assist my preceptor and wrote offering to send him photos from my increasing collection.

After the Department of History of Medicine was shifted to Hyderabad in 1957, I happened to be the Vice-President of Hyderabad Fine Arts Society. I tried to persuade some of the well known artists to prepare sculptures and paintings on some medical subjects in Indian History but did not succeed in creating adequate interest or exhibits. Then, I had to choose the only alternative left to me. I selected artists, one after another and trained them to copy some scenes from sculptures and draw some original scenes, based on historical or Medical writings according to the interpretation of the competent scholars.

The Museum was organised, primarily, as a visual aid to the medical students and the medical teachers, to understand and appreciate History of Medicine in world context, with special emphasis on Indian Medicine and secondarily, to educate the future administrator and the enlightened citizen, in India to appreciate that Medicine in India is an eternal river, receiving different tributories, and fresh currents, a confluence of streams, like the perennial and mighty Ganges, sustaining the life of the Country.

The planning of the Museum was done on a modest scale at the commencement of the Upgraded Department under a State Government and was gradually expanded and modified from 1959 to 1966. Responsibility for the divisions, sub-divisions and for the preparation, selection of exhibits and arrangement of these was entirely mine. Therefore, I must also be prepared for criticism, which I hope will be informed and constructive particularly, as there are wide gaps in our knowledge and exhibits relating to certain periods, which I cannot and probably no one can, immediately rectify. All the materials we have, are not in the Museum and all the materials listed and sought by me, are not yet received here. We also realise that there may be some other materials unknown to us, in different parts of India,

to illusrtate different periods of History, different regions and different systems of Medicine and schools of medicine.

It is my hope that other pictures and illustrations pertaining to History of Medicine in India which I had collected during the last four decades and could not be exhibited in the Museum, for want of space, will be arranged, annotated and published, in a book on History of Medicine in India, "A Pictorial History of Medicine in India" or "Medical History of India in Pictures." The readers interested in such works, will have to wait patiently and pray for better times and greater appreciation of the value and uses of History of Medicine, particularly to a country like India, with its hoary antiquity and great heritage of culture, including sciences, like the science of Life and Longevity, protection of health and relief from ill-health.

The nucleus of the Museum was organised in Hyderabad in 1957 in the Gandhi Medical College Buildings, Bashir Bagh, where the Department of History of Medicine was located. Then, after upgrading, the Department was shifted to the historical palatial building, "Nizam Bagh", in Diwan Devdi (Sir Salar Jung's Palace) where the Museum was arranged in 3 halls; one for World Medicine, the second for Medicine in India and the third, for Medicine in Andhra Pradesh or more correctly, in the city of Hyderabad, where the Department was part of the Osmania Medical College. The old building was situated in an extensive garden and was in peaceful surroundings in the old city. Later, the proposals for a separate building, specially planned for different sections, including halls and rooms for the Museum, were dropped and the Department was shifted to the new buildings of the Osmania Medical College, in the erstwhile Residency compound in the heart of the busy city. The exhibits which were in three different halls in the old building in Diwan Devdi, had to be packed into one hall, one section over-flowing into the other and necessitating the elimination of some exhibits for want of space.

As and when the exhibits were selected for the display in the Museum, notes or short legends for them were prepared to enable the visitors to understand the significance of the exhibits, even without a Trained Guide. There were also charts

such as those listing the achievements of Aswins, the genealogy of teachers and the chronological charts, showing the important milestones in the development of Ayurveda, Unani and European Medicine in India. These charts were much appreciated by the visitors and copies of them were frequently requested. Therefore, they are reproduced in the Guide, though there are many gaps, omissions and deficiencies, which have to be filled up or corrected in future, as we get fresh information.

Since most medical students and practitioners are not familiar with the long and eventful and glorious history of Medicine in India, in different epochs of civilisation and in different empires or kingdoms or cultural centers, it was felt necessary to enlarge the Guide with an introduction at the beginning of the main sub-divisions like Ayurveda, Unani and Modern Medicine and also add a short preliminary note before some of the important periods in which medicine began to blossom.

Visitors to the Museum often express a desire or request for photos of some pictures or a chart or two, to carry to their home or to their institutions or library or Musuem as a momento or a souvenir. Some ask for an illustrated guide or album. The museum receives requests for participation in exhibitions or to organise special exhibitions. Some requests also come from distant lands for pictures, pertaining to History of Medicine in India, to illustrate some books or articles in journals or for lectures. The demand has been growing year to year.

While the Institute feels honoured that some of the pictures in the Museum were published in Journals and books, with due acknowledgements, there were other occasions, when photos of original paintings in the Museum, were published by other journals, without any credit to the Institute, as for instance, "Operation for cataract according to Susruta", in the article, "Along the Road to Modern Medicine", in "World Health" (a journal of the World Health Organisation) in the issue of May 1971, or the picture of "Aswins" in the article, "Baidyas of Bengal", published in "The Illustrated Weekly of India" 23rd May, 1971. In the same article, in the Illustrated Weekly, a picture of Charaka and the photo of the painting "Learning Operation Techniques according to Susruta" were printed

giving undue credit, to some other Institutions, to which this Museum supplied copies! Loss or Penalty for delay in publishing the Guide !

I would have liked to acknowledge the help of many friends who have co-operated with me in this work, but they are too numerous to be mentioned here, individually. I should not however, fail to place on record, the good work done by the former staff of the Museum; in the initial stages, by Mr. Krishnakumar, Museum Technician, and by Mr. Benjamin Franklin, Museum Curator, in organising and arranging the Museum. Mr. V. V. Ramana Rao, who was later Curator from 1965 to Aug. '71, rearranged the exhibits to improve the Museum and also deligently studied some reference works and articles, suggested by me, for the compilation of additional preliminary notes and for expanding the short legends, attached to the pictures. The entire text had to be scrutinised and revised many times and the entries in sections rearranged and edited.

I must acknowledge the co-operation of the printers, M/s. B. V. R. Balreddy & Co., Secunderabad, who carried out the repeated corrections and additions.

I am very grateful to Mr. C. Sivaramamurti, Director, National Museum, New Delhi, a profound scholar in Sanskrit and a connoisseur of Indian art and culture, for sparing time, in the midst of his monumental literary and artistic labours, to write a foreword to this Guide.

Finally, my sincere thanks are due to the Central Council for Research in Indian Medicine and Homoeopathy, for kindly approving my proposal to print and publish the Museum Guide and sanctioning adequate funds, for publishing a large number of pictures as plates. I trust that the publication will bring credit to the Council and secure respect and admiration that is overdue to our glorious heritage of the Science of Life, insuring health and happiness for Humanity.

1-12-1971.
HYDERABAD.

D. V. SUBBA REDDY
Honorary Director,
Institute of History of Medicine.

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   From Mohenjodaro : A street with drains; the great bath ; well and bath room. *From Lothal :* Well and drain ; bath platform with drain; privy with soakage jar. *From Peshawar Museum :* Fasting Buddha - Taxila (Gandhara). *From Barhut:* Jeevaka receiving king Ajatasatru (Ajatasatru Pillar). *From Girnar :* Rock at Girnar showing inscription of Ashoka ; Estampage of the Ashoka's inscription.

2. To THE SUPERINTENDING ARCHAEOLOGIST, ARCHAEOLOGICAL SURVEY OF INDIA, GOVT. OF INDIA, HYDERABAD.
   From Nagarjunakonda: General view of Nagarjunakonda;

University area with fever hospital; inscription mentioning Jwaralaya; Mandhata Jataka. Malkapuram Pillar with inscription; & estampage of inscription.

3. To the Director of Archaeology, Govt. of A. P. *From the Archaeological Museum, Hyderabad city*: (*Kakatiya Pillar*); Churning of the ocean & Deccani Hakim.

4. To the Superintendent, Govt.Museum, Egmore, Madras. (*Amaravathi:*) Sibijataka; Jivaka in conversation with Ajatasatru, *(Goli Stupa)*; Chaddanta Jataka.

5. To the Director of Archaeology, Govt. of Bihar, Patna. Jeevakamravana (General view of excavations).

6. To the Director of Archaeology, Govt. of Mysore. Dhanwantari, (Hoyasala Period).

7. To the Director, K. P. Jayaswal Res. Institute, Patna. *From the excavations of Kumrahar:* General view & covered drain; Terracotta seal of Arogyavihara; potsherd with the inscription "Dhanwantari".

8. To the Director, French Institute of Indology, Pondicherry. Photo of the sculpture of Agastya.

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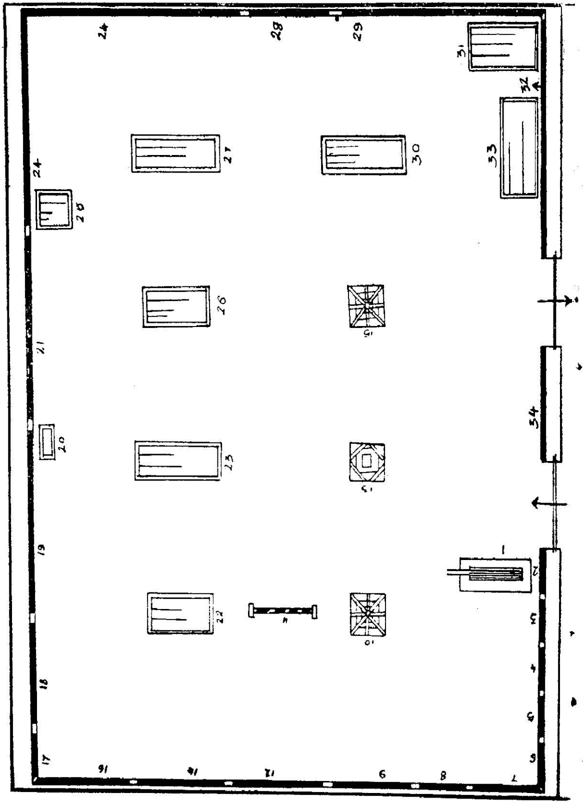
Plan of the Museum



KEY TO THE PLAN

World Medicine: 1 to 16
(Guide Part-I)

World Medicine

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LORD DHANWANTARI
Hoyasala Temples, Halebed

AGASTYA
Siva temple, Tiruppangur,
Sirkali Tq., Tamilnadu.

MEDICINE IN INDIA

PREHISTORIC PERIOD

The History of Ancient Indian Medicine can be broadly divided into prehistoric and historic periods. The prehistoric period ranges from the old stone age to the beginning of written history. This period can again be sub-divided into prehistoric and protohistoric periods.

The prehistoric period or the stone age civilization, throws very little light on reliable and datable evidences of any interest to medicine. During this period, man was mainly a wandering hunter, and might have followed a crude system of medicine based on instinct and superstition. In the neolithic period we may presume that the people were worshippers of supernatural phenomena or supernatural beings; and followers of the cult of mother- goddess and various minor deities, to get relief for their ailments.

The most significant example of the protohistoric civilization, which has, an yet undeciphered language, on the seals, is what is called the Indus Valley civilization. It extends from the neolithic to the Aryan invasion of India and was dated on archaeological evidence to extend from 3,000 B. C. to 1,500 B C. The people were animistic and their medicine might be mainly magico-religious. Though many metallic implements were discovered in this chalcolithic (copper stone) civilization, no direct evidence is available with regard to surgical instruments. Some of the fine metallic rods are supposed to be those used for the appli-

cation of collyrium to the eyes. It is worth mentioning that "Silajit", a drug still used in Ayurveda has been found in the excavations. Though many skeletons have been unearthed from the burials at Harappa, no detailed study has been made on the paleopathology of these finds.

But the excavations at Mohenjodaro, Harappa, Lothal etc., bear ample evidence to the efficiency of these people in the matter of public health and sanitation. These cities represent the oldest examples of town planning and public sanitation unparalalled in any other civilization of that period and even far exceed some of the town planning systems of the recent periods.

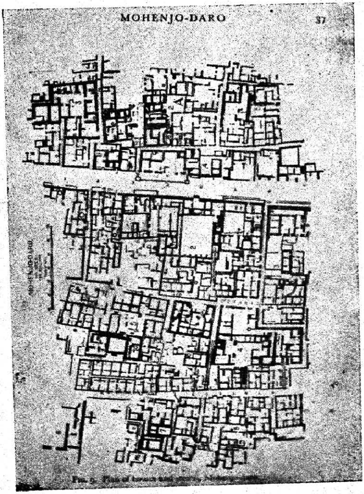
It is not only in Harappa and Mohenjodaro alone that this civilization was discovered ; the same type of cities have been unearthed in many areas to the east of the Indo-Pakistan boarder, thus proving that the same culture had spread southwards and eastwards.

Mohenjodaro :

The excavations at Mohenjodaro and Harappa show that the people of those times lived in well planned brick-built cities. The dwelling houses, which were numerous, vary in sizes from a small one with only two rooms, to that of a palatial structure, having a frontage of 85 feet and a depth of 97 feet, with an outer walled enclosure. The big houses had two or three storeys and were provided with all civic amenities like water supply, drainage, bath rooms, privies, courtyards etc. In addition to dwelling houses, there were also commodious. buildings meant for community use.

Plan of the city of Mohenjodaro:

Line drawing :



The illustration shows that the streets were well planned, wide, straight and were intersected by systematically planned lanes and byelanes. On the whole, the plan and arrangements show that there was a well organised civic administration.

A Street with Drains at Mohenjodaro :

Photo

The photo shows a well planned street and the covered drains.

The Great bath at Mohenjodaro :

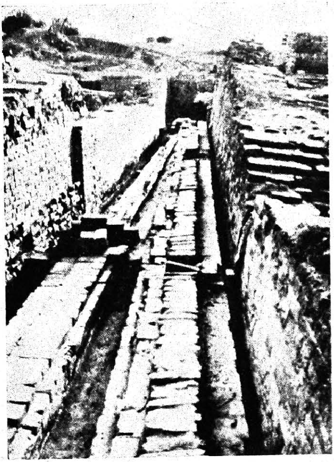
Photo

It is the most imposing structure in the city of Mohenjodaro. It is in the form of a large open quadrangle with galleries and rooms on all sides. The swimming enclosure in the centre is 39 feet long, 23 feet wide and 8 feet deep. It has a flight of steps at either end, and is fed by a well, situated in one of the adjoining rooms. It is surrounded by a courtyard, into which opened a corridor through ranges of brick piers or jambs, from all the four sides. It is made water tight with lime mortar. A huge arched masonry drain serves as outlet for the water, when necessary.

Interconnecting brick drains at Lothal :

Photo

Lothal, like Harappa and Mohenjodaro presents one of the earliest examples of town planning, with elaborate drainage system. The drains which were constructed with bricks, were covered. Drains from the dwelling houses were connected to large main drains in the streets, which were cleaned through large specially made brick manhole-covers. Soakage pits take the eventual sewage.

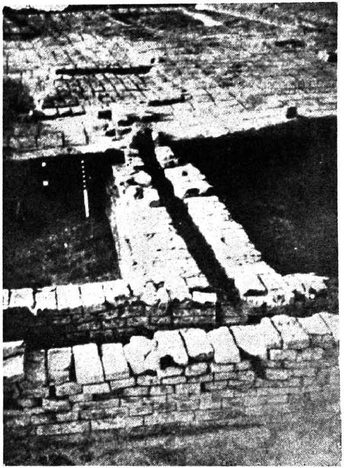


Mohenjo-daro - A street with drains.

Mohenjo-daro - The great bath.

Plate II

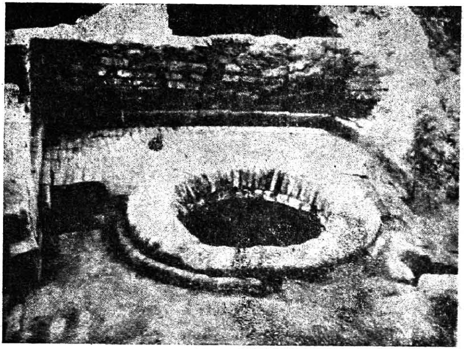
Lothal:- Privy



Lothal:- Bath platform with drain.

Well - Lothal :

Photo



The well was built with burnt bricks and is 24 feet deep. This shows that wells were used for drinking purposes.

Bath Platform with drain - Lothal :

Photo

Most of the houses were provided with bath-rooms built with kiln burnt bricks, on raised platforms. Drains were provided to carry the water from the bath rooms.

Privy from Lothal :

Photo

The houses were provided with privies, with soakage jars. This is unique when compared with other civilisations of that period.

VEDIC PERIOD

(upto 1000 B. C.)

Our knowledge of Vedic medicine, is mainly derived from two Vedas the "Rigveda" and the "Atharvana Veda". In the Rigveda, there are a few hymns devoted to deities of healing; to herbs with curative value and some diseases, like fever, consumption etc. The most interesting reference in the Rigveda is to the twins, the divine physicians, "Aswins", who have been said to have performed many miracles. In the Atharvana Veda, which contains many hymns for relief from diseases, there are many prayers, incantations and charms, along with herbs for relief from diseases. The medicine of the Atharvana Veda is that of a primitive man to whom the world is full of shapeless gods, ghosts and spirits of death. To get cures for his ailments, he offers prayers, sacrifices, etc.

Aswins, the Vedic Physicians :

Of all the gods of the vedic pantheon, "Aswins", the twin gods are well known as the healers and benefactors, giving succour to the distressed and relief to the suffering and the sick. The Aswins are said to have achieved miracles in the art of healing. They tended and healed the wounded and the sick in the vedic wars. The following is a brief list of achievements of the Aswins praised in the vedic lore.

Chart.

(a) They rejuvenated Chyavana, an old and decrepit rishi.

(b) A rishi thrown into a fiery pit was saved from heat and restored to youth and strength by Aswins.

(c) An old decrepit man called "Vandana", thrown into a pit and buried alive, was rescued by the Aswins.

(d) Aswins gave an artificial leg to a Vedic woman called "Vispala" who lost her leg in a war.

(e) Aswins restored sight to "Rijaswa".

(f) "Parapriv" who was both blind and lame was also relieved or cured by Aswins.

(g) They rescued a woman named "Vartika" from the jaws of a wolf.

Aswins :

Photo of the painting by Sri A. Thambuswamy, drawn for the souvenir of the Madras Medical College Health Exhibition.

The painting shows Aswins, the vedic physicians, with the Sun god, in the back ground.

Aswins riding on horse back :

Copy by Sri R. Sree Gopal, from the original painting of Dr. K. V. Ranganatham.

The painting represents Aswins riding on horse back, to give succour to the suffering.

Aswins providing artificial leg to queen "Vispala" :

Copy by Sri R. Sree Gopal, from the original painting of Sri Ragi Venkateswara Rao, based on the description in Rigveda.

The painting shows "Vispala", a queen, who went to battle field along with her husband, and lost a leg in the fighting, being fitted with an artificial limb by Aswins. This indicates that military surgery and prosthetics were known to ancient Indians.

Aswins with the Sun God :

Photo of a sculpture from the National Museum, Calcutta.

According to Brahmanda Purana, Aswins were born as twins to Vivasvat (the Sun) and his wife Sandhya Devi, daughter of Visvakarma, when the Sun and his wife mated in the form of a horse and mare.

This sculpture shows the Sun god flanked on either side by small human figures with horse heads, believed to represent the Aswins.

Aswins providing artificial leg to Vispala.

Plate IV

PRECEPTORS OF AYURVEDA

From above downwards.

Brahma teaching Daksha
Daksha teaching Aswins
Aswins teaching Indra

From above downwards

Indra teaching Bharadwaja
Bharadwaja teaching Atri and other
Indra teaching Divodasa

POST VEDIC AND EPIC PERIODS

(10th century B.C. to 6 century B.C.)

Ayurveda means the science of life. It is traced from a mythical, through a semi-mythical, to a historical beginning. According to this tradition Brahma, the creator of the universe taught Dakshaprajapati and Daksha taught the Aswins, the vedic gods of medicine, who in turn taught Indra. All schools of Ayurveda agree with the divine geneology upto Indra; but give different versions regarding the transmission of the science among the mortals, as represented in the chart given below:

Preceptors of Ayurveda

Brahma
|
Daksha
|
Aswins
|
Indra
|

(According to the version in Susruta Samhita.)	(According to the version in Kashyapa Samhita.)	(According to the version in Charaka Samhita.)
Dhanvantari or Divodasa	Kashyapa, Vashista, Atri and Bhrighu	Bharadwaja
Susruta, Aupadhenava, Vaitarana, Aurabhra, Paushkalavata, Karavirya, Gopurarakshita, Bhoja and others.	Their sons and disciples.	Atreya Punarvasu
		Agnivesa, Bhela, Jatukarna, Parasara, Harita, Ksharapani, and others.

Teachers and pupils of Ayurveda:

Illustrations from an old Sanskrit medical book, printed in Varanasi, more than a 100 years ago.

(a) Brahma teaching Daksha.
(b) Daksha teaching Aswins.
(c) Aswins teaching Indra.

School of Bharadwaja:

(d) Indra teaching Bharadwaja.
(e) Bharadwaja teaching Atri and others.

School of Dhanwantari:

(f) Indra teaching Dhanvantari or Divodasa.
(g) Divodasa teaching Susruta and others.

Dhanwantari:

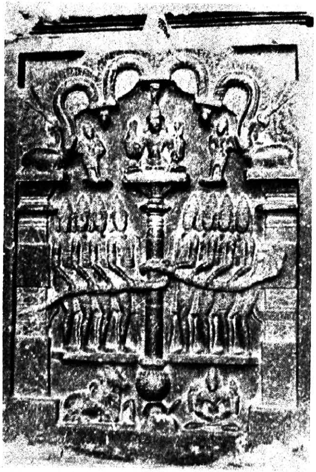
Dhanwantari is the name of the physician of the gods in heaven. According to Vishnupurana, he rose from the ocean of milk carrying the pot of Ambrosia and medicinal herbs, when the Devas (gods) and Asuras (demons) churned the ocean of milk. He is mentioned in Puranas and Susruta Samhita, as divine Physician.

He is said to have appeared in this world of humans as Divodasa, king of Kasi, also knowan as Dhanwantari. The Susruta Samhita refers to Dhanwantari as the teacher of "Salya Tantra" or surgery who taught the science of surgery to Susruta, and others at Kasi.

(a) Churning of the ocean.

Plaster cast of a sculpture on Kakatiya pillar from Warangal, (11th to 13th centuries), prepared by Sri R. Sree Gopal.

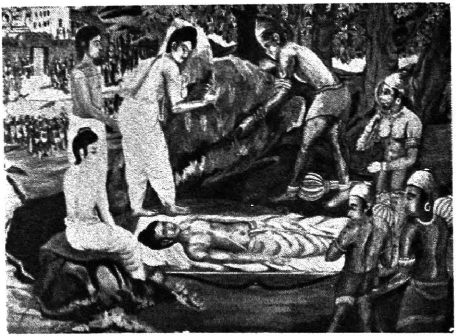
The sculpture shows the gods and rakshasas churning the ocean, and Dhanwantari rising out of the ocean carrying a pot of ambrosia.



(a) Churning of the Ocean

(b) Standing Dhanvantari (Lepakshi)

Bhishma on the bed of arrows



Revival of Lakshmana

(b) Seated Dhanwantari :

(i) Photo of a sculpture from Hoyasala temples, Halebed, Mysore State (12th or 13th century.)

(ii) Plaster of paris replica of the above sculpture.

This is one of the most beautiful reliefs of Dhanwantari in the rich decorative style characteristic of Hoyasala sculptures. Here he is represented as a form of Vishnu.

(c) Standing Dhanwantari :

Photo of the sculpture, from Lepakshi temple, Anantapur District, Andhra Pradesh (15th or 16th century).

The sculpture is a fine representation in Vijayanagar style.

EPIC PERIOD

The Epic period is best represented by the "Ramayana" and "Mahabharata". At this period, there were military surgeons and physicians attached to every king, great or small. There were court physicians to look after the King's health. Army surgeons, fully equipped with medicines and surgical appliances accompanied the armies at times of war and under took major and minor operations.

Bhishma on the bed of arrows :

Painting by Sri R. Sree Gopal, based on the description in Mahabharata (Bhishma Parva).

When Bhishma was wounded and was lying on the bed of arrows, in the battle of Kurukshetra, many experienced and skilled surgeons with various instruments, waited on the wounded warrior and offered to treat him. But the heroic Bhishma, refused to take any treatment in that condition, as he wanted to die on the bed of arrows, as a true Kshatriya. So he asked Duryodhana to give them presents and honour them.

The painting shows, Bhishma lying on the bed of arrows, with military surgeons standing by, while Arjuna, provided a sprout of pure water, to quench the thirst of the wounded warrior.

Revival of Lakshmana :

Painting by Sri R. Sree Gopal, based on the description in "Ramayana" (Yuddha Kanda).

Ramayana is a rich source of references on the subject of Medicine and Military Surgery. In the battle with Rakshasas, Lakshmana, younger brother of Rama, was wounded and fell unconscious, in the battle field. While Rama was weeping for his brother, one of the Vanaras, Sushena, consoled him, by saying that "Lakshmana was not dead as his face was neither disfigured nor turned dark, nor lustreless and as his heart palpitations can be felt and as it is accompanied by respiration". Under instructions from elders, Hanuman, brings "Sanjivani" the restorative herb, and with its administration Lakshmana regained consciousness.

The painting shows Lakshmana lying unconscious with Rama sitting by his side in sorrowful mood, and the Vanaras administering, herbs to revive the unconscious warrior.

Agasthya :

Photo of a painting.

Agasthya (6th or 7th century B.C.) was a great sage, who came from the north to the south. He has been mentioned in the Rigveda, the Ramayana, Mahabharata and Brahma-vaivarta Purana etc. In the south, he is venerated as the first teacher of science, literature and medicine to the early Dravidian tribes.

BUDDHISTIC PERIOD

(5th Century B. C. to 4th Century A. D.)

In the Buddhistic Period medical relief and nursing was encouraged but the use of knife was discouraged; therefore surgery was neglected. Buddha put a stop to animal sacrifice for ethical reasons, and did not permit animal dissection; but gave support and stimulus to medicine, and for the establishment of health centres for men and animals. The Buddhistic literature mentions the great universities at Taxila or Takshasila, Kashi or Varanasi, and Nalanda, where all sciences and arts, including medicine were taught. Buddha himself is said to have nursed some Bhikkus. Jeevaka, a contemporary of Lord Buddha was a great surgeon as well as a Physician. Some sculptures of medical interest were unearthed at Taxila, Barhut, Amaravati, Nagarjunakonda, Sarnath, Kumrahar etc. There are references to health centres etc, in Buddhistic times. Smelting ovens for preparing metallic medicines were discovered at some of these places.

Emperor Asoka, who was a follower of Buddhism, established general hospitals as well as veterinary hospitals. His inscriptions were spread throughout India.

Fasting Buddha :

Photo of a sclupture from Taxila. (1st / 2nd century A.D.)

In this sculpture, Lord Buddha was shown in an emasciated condition due to fasting and penance. Bones, skin and blood vessels can be clearly seen in the sculpture. It reveals the

anatomical knowledge of the artist in the early centuries, just before or after the beginning of the Christian era.

Sibi jataka :

(a) photo of a panel from Amaravati (about 2000 years old) :

(b) Plaster cast of the above sculpture prepared by Sri S. Dhanapal, School of Fine Arts, Madras.

King Sibi according to different versions in Mahabharata and Jataka tales, offered his flesh to a hungry hawk, in order to save a pigeon, which sought protection of the king from the hawk.

The relief has two parts :

The upper part of the relief represents the king sitting on a throne with a dove and a hawk in front and a number of courtiers and archers, around him.

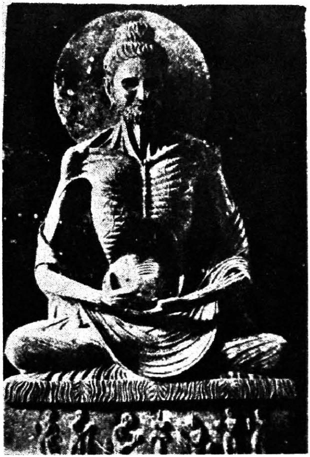
The lower part, shows flesh being cut by a surgeon from the arm of the king. On the extreme right of this scene, is shown the balance, being filled with the king's flesh. The surgeon is kneeling or sitting, facing the king, holding the king's arm with his left hand and cutting flesh with a broad knife in his right hand.

This represents surgery in the early centuries of Christian era.

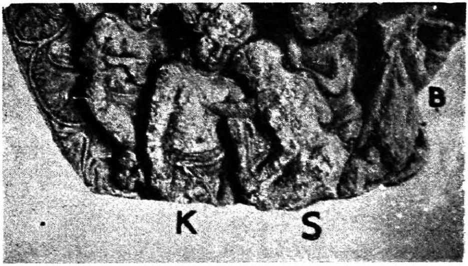
Sibi jataka :

Photo of the scene in Gandhara sculpture. (about first century A.D.).

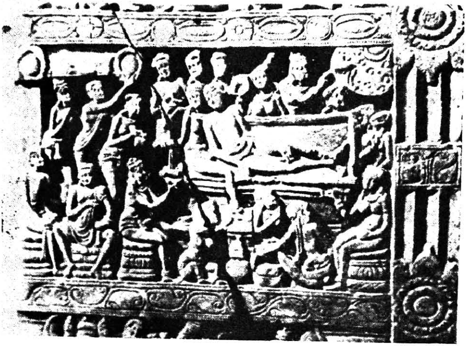
This sculpture is different in many respects from that of the Amaravati sculpture.



Fasting Buddha



Sibijataka (Amaravati)



Mandhata jataka

Chaddanta jataka

Here the king is seated on the throne with a dove near his feet. The scale used for weighing the flesh is peculiar and different from those types used in India of those days. One person was removing masses of flesh from the chest and another person sitting, was removing flesh from the calves of the king.

Mandhata Jataka

Photoes of the sculptures from Nagarjuna Konda excavations (about 100–300 A.D.).

According to Jataka tales. in the early ages of the world, Bodhisatva was born as a king and was called Mandhata. After ruling the earth for countless years; as the sole monarch, he became discontent with earthly splendour, and with the power of wheel (Chakra Ratna) he went to the heaven and was made the ruler of the heaven of four great kings. After some years, he got tired there also, and proceeded to the heaven of thirty three kings, ruled by Sakra (Indra). Sakra gave Mandhata half of his kingdom and both of them ruled it as equals. Mandhata ruled there till thirty Sakras succeeded one after the other. Then, again he became discontented and thought of becoming the sole monarch of the heaven by killing the Sakra. He could not kill Sakra, but because of this evil thought, he himself began to age. As the human body does not disintegrate in the heaven, he fell down to the earth in his park. The story is chiselled in two sculptures, which differ slightly from one another.

1 : It shows king Mandhata in the royal park, after he fell down from the heaven and is about to die. He is shown reclining on a couch with his feet on the lap of his principal queen. He has a wearied look, and is evidently dying. The queen has a sorrowful look and female attendants are shown anxiously waiting and bringing various things and ministering the dying monarch. Behind the couch, in a pavilion, other women are shown weeping and striking their breasts with their hands.

2 : In another sculpture, not illustrated here, the king was shown, reclining in a couch in a state of extreme lassitude, being supported by a woman probably his chief queen. Two other women, perhaps, two of his queens are seated on stools on either side of the couch. Female attendants in various attitudes are shown bringing necessary things and attending the king. A portion of the sky is shown on the upper right hand side in which a falling star is shown along with crescent moon and stars.

In these two sculptures, the Andhra artist has chiselled the death scene of the great king, Mandhata.

Chaddanta Jataka :

Photo of the sculpture excavated from a Buddhist stupa near Goli, in Krishna District of Andhra Pradesh (about 200 A.D.).

According to Jataka tales, Bodhisatva, in one of his previous births was born as a royal elephant. He had two wives, one of whom conceived a grouse against him. She died, and in her next birth was born as a woman, who married the king of Varanasi and became his favourite queen. As she had a feeing of revenge against her former husband, she pretended to be sick and told her husband that she had seen a six tusked elephant and the tusks of that elephant alone would cure her ailment. The king sent a hunter who, on the instructions of the queen, trapped the elephant and brought the tusks. The elephant died as soon as the tusks were cut off.

The panel shows the queen in a state of collapse on seeing the tusks; due to remorse for her evil deed. The queen is leaning on the lap of the king in swoon or falling down dead, at the sight of the tusks in a basket, which the hunter is showing to her.

This is a representation of fainting and collapse of a queen.

Buddha attending the sick :

Copy by Sri R. Sree Gopal of a color print published by Calcutta Chemical Company.

The picture shows Lord Buddha attending on a sick person. There are many instances of Lord Buddha giving relief to the suffering mankind, with his healing touch. This represents one of such scenes.

Jeevaka

Jeevaka was a well known physician, surgeon and paediatrician of Buddha's time. He learned the science of medicine from Atreya at Taxila, completing a seven years course to the best satisfaction of his teacher. He was the physician-in-ordinary to the king Bimbisara. He attended on Buddha and also presented a mango grove for Buddha and his disciples. There is a reference to Jeevakamravana in the ruins of Kumrahar.

Emperor Ajatasatru in conversation with Jeevaka, the Physician :

Photo of a sculpture from Amaravati.

After murdering Bimbisara, his father, king Ajatasatru was unable to sleep due to remorse for his evil deed. On the advice of Jeevaka, the court physician, he wanted to have a darshan of Lord Buddha; to soothe his troubled mind.

The upper panel in this sculpture, shows Emperor Ajatasatru, consulting Jeevaka in the royal palace. Both are seated and the king occupies a higher seat. The elephants and the royal retinue can be seen on either side.

In the lower panel, king Ajatasatru and Jeevaka are shown worshipping Lord Buddha in Jeevaka's mango garden.

11232

Jeevaka

A plaster of paris relief of Jeevaka based on the Amaravati sculpture, prepared by Shri Dhanapal of Madras.

Jeevaka accompanying Emperor Ajatasatru on a visit to Buddha :

Photo of a sculpture from Barhut.

The basrelief shows in the lower part king Ajatasatru mounted on an elephant, coming in a procession accompanied by women and torch bearers to Jeeveka's mango grove at Rajagriha. In the upper half, the Emperor and Jeevaka are shown worshipping Lord Buddha.

Jeevaka :

Original painting by Sri R. Sree Gopal, of a portrait, based on the Barhut sculpture.

Jeevaka treating Lord Buddha :

Plaster of Paris model prepared by Sri R. Sree Gopal, based on a story in Buddhistic literature.

The relief shows Jeevaka treating Lord Buddha, for constipation after a heavy meal. Buddha was made to smell a medicated lotus flower, as a purgative.

Cranial operation by Jeevaka :

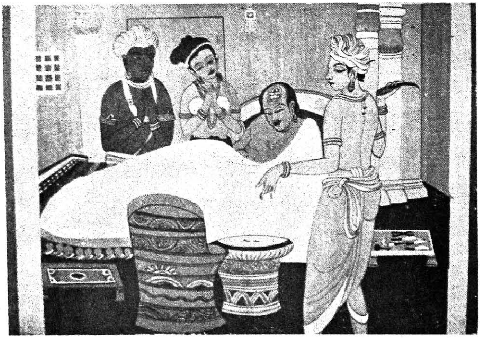
Painting by Sri Ragi Venkateswara Rao, based on the Buddhistic texts.

The legend is that Jeevaka operated on the head of a merchant, who was suffering from intractable head-ache, at Rajagriha. He ordered the merchant, to lie down on his bed, cut and drew apart the flesh on each side of the incision, pulled out two worms and closed up the sides of the wound,

Jeevaka accompanying Ajatasatru on a visit to Buddha-(Barhut.)

Jeevaka treating Buddha

Jeevaka performing laporotomy



Cranial operation by Jeevaka

stitched up the skin on the head and anointed it with a "salve" and ordered him to take three weeks perfect rest. The fame of Jeevaka remained a tradition.

Jeevaka performing laporotomy :

Original oil colour painting by Sri R. Sree Gopal, based on the description in the Buddhistic literature.

The description of the story is as follows :

The son of a merchant at Varanasi got his intestines twisted, while amusing himself by tumbling, in consequence of which he could not digest any food and was not able to ease himself in the normal way. He grew very lean, disfigured and discoloured. The merchant approached king Bimbisara to send Jeevaka to cure his son.

By the king's order, Jeevaka went to Varanasi and after carefully observing the changes in the appearance of the merchant's son, ordered the people to leave the room, drew the curtain, tied the patient fast to a pillar, placed the patient's wife in front of him and cut through the skin of the belly, drew the twisted intestines out, and disentangled the twisted entrails, put the intestines back into the right position, stitched the abdominal wall together and anointed it with salve.

Other cures of Jeevaka mentioned in the Buddhistic literature :

a) At Saketa (Oudh) he cured a Setty's wife, who had been suffering for 7 years from a disease in the head, by giving her medicine once through the nose.

b) He cured the Magadha king Bimbisara of fistula.

c) He cured king Pradyota of Ujjain, of jaundice.

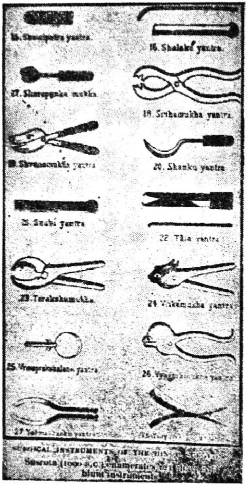
d) He treated Lord Buddha for a leg wound caused by a boulder, hurled by his cousin Devadatta.

MEDICAL SAMHITAS

SUSRUTA•

Susruta, (500 BC) was the greatest writer on surgery in ancient India. He learned the science of medicine from Divodasa Dhanwantari, king of Varanasi.

Susruta wrote "Susruta Tantra" and this original treatise was later redacted by Nagarjuna, who added a supplement. This is now known as "Susruta Samhita".



He described about 101 varieties of blunt instruments and 20 kinds of sharp instruments. Cataract crouching was attri-

buted to him. He has successfully demonstrated the feasibility of mending mutilated ear lobe and nose with a flap of skin cut from the adjoining part of the cheek (Otoplasty and Rhinoplasty). Amputation of limbs, abdominal sections, setting of fractures and dislocations, reduction of hernia and removal of haemorrhoids and fistula, were extensively dealt by Susruta.

Though Susruta's work is mainly devoted to surgery, it also deals with medicine, anatomy, pathology, ophthalmalogy, midwifery and biology. He classified surgical operations as (a) Extraction of solid bodies, (b) Excising, (c) Incising, (d) Probing, (e) Scraping, (f) Suturing, (g) Puncturing and (h) Evacuating fluids.

* * *

A series of paintings by Sri R. Sree Gopal, illustrating the text of Susruta :

Preparation of the deadbody for dissection :

Susruta the father of Hindu surgery stressed the necessity of practical training. The process prescribed for preparing the deadbody for dissection is as follows :

A deadbody, selected for this purpose, should not be wanting in any of its parts, should not be that of a person of very old age or of one who died from any protracted disease or of poison. The excrementa should be first removed from the entrails and the body should be left to decompose under water of a solitary and still pool, securely placed in a cage (so that it may not be eaten away by fish or drift away); after having covered it entirely with the outer sheaths of Munja grass, Kusa grass, hemp or with rope etc.

After seven days the body would be thoroughly decomposed, when the student should slowly scrape off the decomposed skin etc., with a whisk made of grass-roots, hair, Kusa blade or with a strip of split bamboo and carefully observe with his own eyes all the various different organs, external and internal, beginning with the skin.

Learning anatomy by preparing models in clay :

This is another illustration, stressing the need for practical training in ancient India. According to Susruta, the pupils should also be taught anatomy by encouraging them to prepare models of the various organs in clay.

Learning operative procedures by cutting on fruits and vegetables:

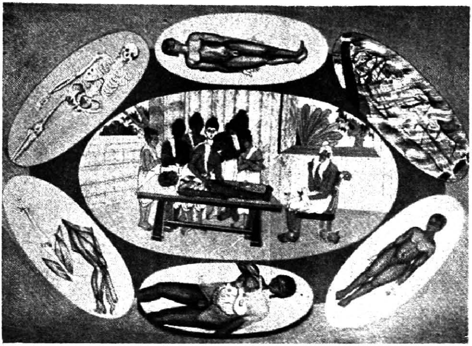
Susruta emphasized the methodical instruction in surgical operations. According to him, the pupil should learn the operative procedures like deep cuts, incisions, excisions, sections and cross sections, suturing, stitching etc., by first cutting on various kinds of gourds, cucumbers, water-melons, leather bags or bladders of animals distended with water.

Operation for cataract (crouching) : (The patient is shown lying on bed in this picture) :

The description is as follows :

The patient should first be treated with "Sveda" (fomentation) and Sneha at a season of the year when it is not too cold or too hot. Then the patient's hands etc. should be secured with proper fastenings and the patient should be allowed to sit at a lower level than that of the operator. The eye should be warmed with the breath of the mouth and it should be rubbed

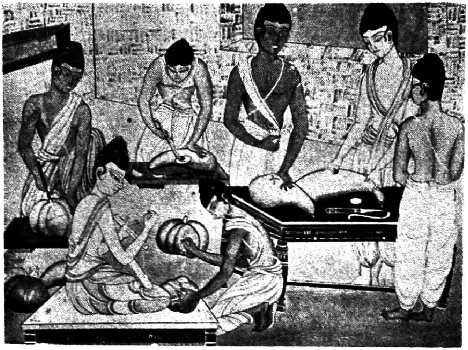
ILLUSTRATIONS BASED ON SUSRUTA SAMHITA



Preparation of the dead-body for dissection

Learning anatomy by preparing models in clay

ILLUSTRATIONS BASED ON SUSRUTA SAMHITA



Learning operative procedures by cutting on fruits and vegetables

Operation for cataract

with the thumb after cleaning. Then the surgeon should draw the eyelids apart with his thumb and index finger and the middle finger and should insert the lancet instrument through the sides of the natural aperture, near the external angles of the eye and move it upwards to and fro. The left eye should be pierced with right hand and right eye with the left. If the piercing is done properly, there comes a noise and a water drop flows out without pain. Then, by sprinkling the affected organ with breast milk, the eye apple should be scratched with the edge of the lancet without causing pain. Then the phlegm (or dosha) should be pushed towards the nose, when the patient should direct it by drawing into the nose. The eye should be fomented from outside at this stage. If the patient will be able to see objects, then the lancet should be pulled out slowly. The wound should be bandaged with greased cotton and the patient should be allowed to lie down.

The bandage should be removed every fourth day, and the eye should be washed and fomented. This process should be continued for about ten days.

Surgical Ward :

Description is as follows :

The ward should be built according to the rules of the architectural science. It should be auspicious, clean and protected from the sun and the wind and should be free from diseases.

The physician before commencing to perform any of the surgical measures, should keep appurtenances like appliances, instruments, caustic alkalies, fire, probes, horns, leeches, sucking gourd, honey, ghee, fat, milk, oil, soothing lotions, ointment, paste, fan, cold and hot water, basin etc., ready at hand.

AGNIVESA AND CHARAKA

According to Charaka Samhita, the first teacher of Ayurveda on the earth was Bharadwaja, who taught that science to a number of disciples, among whom the most distinguished was Atreya Punarvasu, who had created a school of medicine, around himself. His most notable disciples were Agnivesa, Bhela, Jatukarna, Parasara, Harita and Ksharapani; who were said to have produced excellent works on medicine known as Tantras or Samhitas after their names.

Agnivesa, was the author of the medical treatise called the "Agnivesa Tantra". It is deemed the most learned work and became popular. This was later revised by Charaka and came to be known as "Charaka Samhita". Four more chapters were added to it later by 'Dridhabala'.

Charaka was a great Physician and Philosopher of ancient India. Regarding his date there is a great divergence of opinions. The Indians believe him to be a rishi of great antiquity. According to a Chinese translation of the buddhist "Tripitaka", Charaka was the court physician of Kushana king, Kanishka, in the first century A. D.

Charaka's voluminous book is divided into seven parts and it deals with various diseases of the heart, chest, abdomen, genital organs, etc., their cause, symptoms and treatment. He also dealt with diet, drugs, antidotes, and mentions the use of syringes, emetics, purgatives, and enemas. He gives instructions for the erection of hospitals and purification of the beddings etc. by steam and by fumigation.

Charaka Samhita has been translated from Sanskrit into Arabic and his name occurs in the works of Arabian Physicians like Rhazes and Avicenna, whose treatises were later trans-

lated into Latin for students of medieval universities in Europe.

Charaka :

Photo of a painting published by Charaka club, New York.

* *

A series of illustrations drawn by Sri R. Sree Gopal based on Charaka's Text :

General Hospital :

The description is as fol ows :

The expert architect should first design a good house which is strong and warding of the wind except on one side, affording comfortable moving space, not surrounded by high places, not penetrable to smoke, heat, moisture, dust and to undesirable noise, contact, taste, sights, and smell and is furnished with a water storage room, pharmacy room, latrine, bath room and kitchen.

Dhara Griha (Cool Room)

Illustration.

It is described as follows.

The patient suffering with high fever and with a sensation of burning should lie down at ease in a specially constructed apartment or house from the upper part of which, there trickles, on all sides, a continuons shower of cold water or cold sandal water, cooling the interior.

Pumsavana :

Painting.

The rite is described as follows in the text : (Jamnagar Edition).

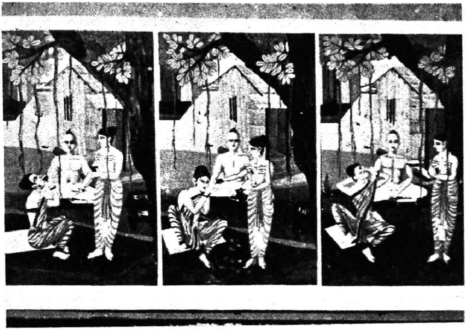
The physician, after inspecting a newly conceived woman, before the signs of gestation become apparent, should administer to her, the rite of "Pumsavanam" for fixing the male sex.

(a) Having culled two fresh sprouts, one each from easterly and westerly branches of a banyan tree, growing in a cow-pen and dropping them together with two unbroken grains of black gram or white mustard-seed in curds, the woman should be made to drink it during the conjunction of the pushya asterism with the moon.

(b) In the same way, the paste of such drugs as jeevaka, rishabhaka, rough chaff tree and crested purple nail dye, which have been treated either all together or separately as prescribed, in milk or else, such insects as the (Kudyakitaka, Matsyaka) wall insects should be swallowed by the pregnant woman having placed them in the water cupped by joining both hands, in the pushya conjunction.

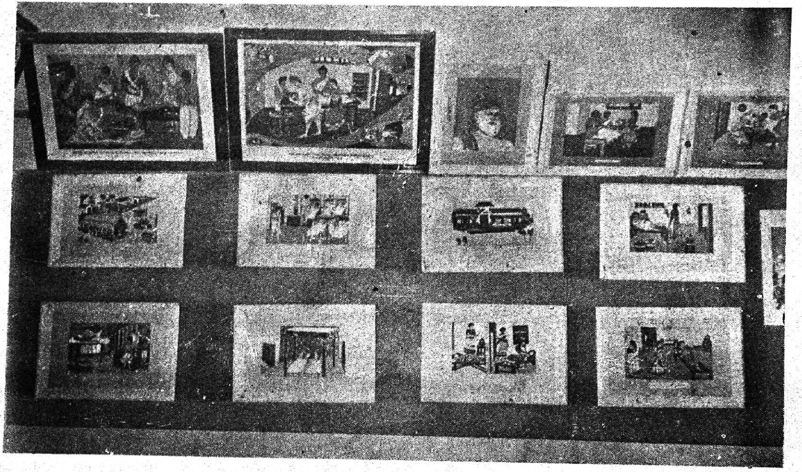
(c) Moreover, having inhaled the heat emanating from the flour of Sali rice while it is being roasted and placing the extracted juice of the very flour of Sali rice previously soaked

ILLUSTRATIONS BASED ON CHARAKA SAMHITA



Pumsavanam

Delivery house



A view of the Museum showing illustrations on Susruta, Charaka and Vagbhata

in water, on the thresh-hold, the pregnant woman should herself drop the juice into her right nostril by means of cotton wool.

Moreover, whatever else, the Brahmanas, or well-meaning women may declare as desiderata in the rite of "Pumsavana" shall the expectant mother do.

Delivery House :

Illustration.

The description of the room is as follows :

Before the commencement of the ninth month, the physician should get a lying-in room erected on a site free from inauspicious things like bones, broken vessels etc. It should be built well, well plastered and provided with doors and windows. There should be arrangements for a fire-place, for water-storage, pounding, lavatory, bath room and kitchen, and it should be comfortable for that particular season.

Articles like ghee, honey, rock-salt, embelia, deodar, ginger, long pepper, elephant pepper, Indian pennywort, asafoetida, garlic, kadamba, linseed etc., and two grinding stones, two heavy pestles, wooden mortars, and an untamed bull, two gold or silver cases for keeping sharp needles etc. are to be kept ready.

Female attendants who are mothers of many children, sympathetic, affectionate, kind-hearted and of aggreeable behaviour, cheerful and tolerant should be employed. There should be Brahmanas, who are well versed in Atharva Veda. Any other necessary article advised by the Brahmana's should be kept ready.

The bed and nurses for the expectant mother :

Illustration :

The bed should be soft and wide with pillow. The woman should lie in a recumbent position with her lower limbs, bent at the knee, and raised upwards and tilted outward.

Four nurses who are good natured, experienced and proficient in childcare, whose nails were clipped should serve the lady.

Measures to expel the undelivered placenta :

Illustration

The undelivered placenta produces the swelling of the abdomen. Then the neck of the woman should be gently rubbed with bands of hair.

Kumaragriha: (House for the care of the new born) :

Illustration.

The description is as follows:

A skilful architect should build and furnish the Kumaragriha. It should be excellent, beautiful, well-lighted, sheltered from drought, admitting of air from only one direction, strong, free from such pests as marauding beasts, animals, fanged creatures, mice and moths, well-planned as regards the places of water-storage, grinding, lavatory, bath and cooking, comfortable during all seasons, and provided with beds, seats and spreads suited to each season. Moreover, the rites connected with protecting the house from the influence of evil spirits as also those with propitiatory, auspicious, sacrificial and penitential offering, should be performed and the house should be filled with clean and experienced physicians and with those attached to the family.

Care of the new born :

Illustration.

The description is as follows.

The child covered with a soft silken cloth, should be made to sleep in a silken bed.

LATER BUDDHISTIC PERIOD

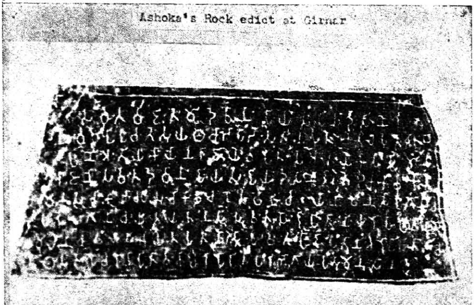
Ashoka's rock edict at Girnar :

Ashoka, (3rd century BC) the great Mauryan Emperor, who turned a Buddhist after witnessing the horrors of Kalinga war, established many hospitals for men as well as animals, throughout his kingdom. This edict is one of those mentioning both kinds of hospitals (Arogya Salas).

The inscription reads as follows:

"Everywhere in the dominion of King Priyadarsi, the beloved of the gods and also with regard to all (his) bordering or neighbouring regions (and princes) such as the Cholas, the Pandyas, the Satyaputra (king), the Keralaputra (Prince), (ruling) as far as the Tamraparni (river), the Ionian (Greek) King Antiochos and also those (other) kings who are neigh-ours (or feudatories) of that Antiochos; every where two kinds of medical attendance were made (or instituted) by king Priyadarsi, the beloved of the gods (namely) medical attendance to men and medical attendance to beasts. Medicinal herbs useful for men and those for beasts, wherever they do not exist, have been caused to be imported and planted. Likewise, roots and fruits (fruit trees), wherever they do not exist, were caused to be imported and planted everywhere. On the roads, trees were caused to be planted and wells were caused to be dug for the enjoyment of beasts and of men".

The boulder containing Ashoka's inscription.



Estampage of a part of the inscription.

NAGARJUNA

Nagarjuna (1st or 2nd century A. D.), was a celebrated physician, alchemist philosopher and guide of the Satavahana kings. He studied at the University of Vidarbha and became a celebrated Physician and Alchemist. He is believed to have redacted "Susruta Samhita" and added the supplement "Uttara Tantra", dealing with Obstetrics, Paediatrics and Ophtholmalogy. He was the first to introduce black sulphide of mercury, which does not cause salivation.

The following medical works are attributed to him.

1.	Rasa Kakshaputa	Deals with pruification of mercury and preparation of different kinds of powders and drugs.
2.	Rasa Ratnakara	Deals with Alchemy.
3.	Lauha Sastra	The science of iron.
4.	Rasendra Mangala	Delas with the preparation of mineral drugs.

Nagarjuna Konda excavations (1st 2nd century A. D.) :

Photo of the general view before submersion.

This is the place where Nagarjuna lived and taught in the famous university. Now the ruins are submerged due to the construction of the mighty Nagarjuna Sagar Project. In this great University. all sciences including medicine and arts were taught during the time of Nagarjuna. Students were drawn from various parts of India and abroad.

Jwaralaya :

Photo of the actual inscription mentioning Jwaralaya, excavated at the university area of Nagarjuna Konda.

The inscription mentions "Vihare Mukhye Jwaralaye" which means the principal fever hospital of the monastery.

Nagarjuna :

A painting by Sri R. Sree Gopal, based on the portrait of Nagarjuna in Tibetan banners, reproduced in S. R. Pundit's English translation of Rajatarangini.

Nagarjuna supervising the preparation of medicines :

Painting by Sri R. Sree Gopal, based on the description in Navanatha Siddha Charita, a poetical work of 14th century in Telugu.

The painting shows Nagarjuna, supervising the preparation of various medicines from herbs in his pharmacy;

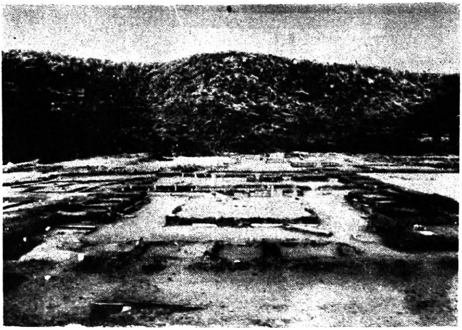
The description in the text is as follows :-

(*Hari Audiseshuvu's translation*) :

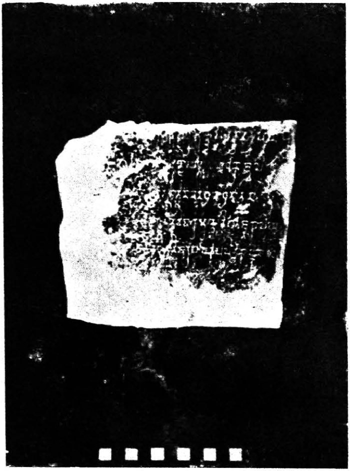
"The five rasas, the five uparasas, the liquid extracts, the drugs and poisons are mixed and triturated well. The essential sacrifices are offered to make the charms and medicines potent. Those with fixed mind concentrated on success and seated well in position are blowing bellows, made of skin fitted with iron tubes, tied well with cat-gut and held together well and tight. The disciples make obeisance to the Master. They offer prayers to the deities presiding over the vegetable drugs. They melt and incinerate the drugs known to them sometimes to powder, or triturate, mixing mercury with different juices from plants. Some set the crucibles in position, while others blow the bellows and incinerate, while still some others clear off the ash and clean. Thus, everyone busied himself in the Lab, while the Master directed all the operations with a discerning eye and look."

Nagarjuna

Nagrjuna Supervising the Preparation of Medicines in his Pharmacy

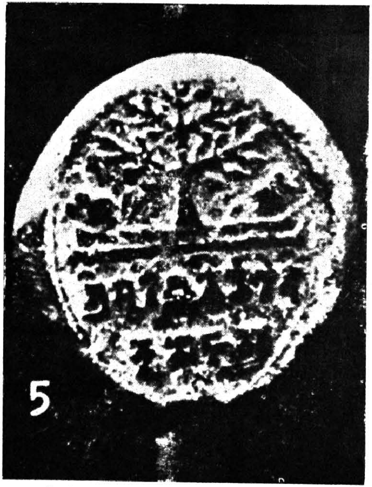


Nagarjunakonda excavations–General View

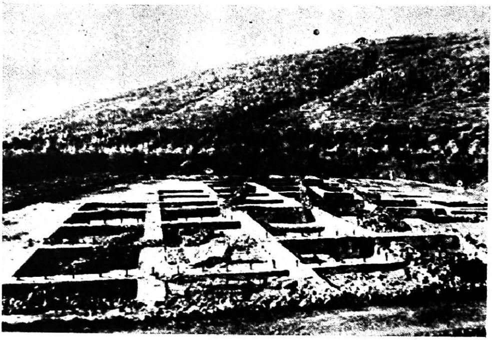


Inscription Mentioning Jwaralaya

Pot-sherd with the Inscription Dhanvantare-Kumrahar



Seal mentioning Arogyivehara-Kumrahar



Excavations at Jeevakamravana

Kumrhar — A drain

KUMRAHAR EXCAVATIONS
(BIHAR)

A Buddhistic monastery in the 4th century A. D.

Jeevakamravana (Jivaka's mango grove):

Photo of the excavations of Jeevakamravana at Kumrahar.

This excavation is identified as the mango garden (vana), where Jeevaka is said to have lived. The excavation shows the basements of the various dwelling places.

Arogya Vihara (Sanatorium or health resort)

Photo of a terracotta seal of the monastic community unearthed at Kumrahar.

In the lower half of the seal is an inscription reading "Sri Arogya Vihare Bhikshusamgasya" meaning the sanatorium of the Buddist monastic community. This is an evidence that Buddhistic monasteries are known to have maintained hospitals or sanatoria.

This is the first time a seal of a sanatorium is discovered in a monastery. The ruins consist of a wing of apartments of unequal dimensions.

Pot-sherd mentioning Dhanwantari:

Photo of the pot-sherd from the excavations at Kumrahar.

This was also discovered at the Arogya Vihara (Sanatorium). The Pot-sherd contains a fragment of the inscription reading "Dhanwantare". This may refer to Dhanwantari, the god of healing or to a physician with that title.

Public Health at Kumrahar:

Photo of a drain.

The excavations at Kumrahar brought to light well planned drainage system comparable to those found at Harappa and Mohenjodaro. The picture shows one of the drains in the monastery area.

VAGBHATA

Vagbhata-I, the author of "Astanga Sangraha" was a physician and great writer of ancient India. Later, a name sake of him, known as Vagbhata-II, wrote another work called "Astanga Hridaya" and has clearly stated in his Uttara Sthana that his compendium is based on the compilation of Vriddha Vagbhata.

There is uncertainity about the age of Vagbhata. He is considered as one of the great trio along with Atreya and Susruta. Atreya, Susruta and Vagbhata were considered as the three great medical authors for the three Yugas, the Treta, Dvapara and Kali respectively, and are known as Vriddhatrayi. Hoernle placed Vagbhata in the 7th century A. D., where as Kunte places him in the 2nd century B. C.

Vagbhata's Astanga Sangraha was a comprehensive treatise on Medicine, therapeutics, hygiene, anatomy, surgery, ophthalmology, pathology and obstetrics. Diabetes, leprosy, asthma, anaemia and haemorrhoids etc., were mentioned in this work.

Charaka, Sushruta and Vagbhata were mentioned by Arabic writers of the 8th to 10th centuries. Vagbhata's "Astangahridaya" was also translated into Persian, in India, as early as 15th century, under the patronage of Mahmood Shah I, of Gujarat, by Hakim Ali Mohammed Bin Ali Ismaili Asavali Aseeli, under the title "Tibb-a-Shifa Mahmood Shahi". Two copies of this translated work are now in Hyderabad and Ahmedabad.

A page from the Persian translation of Astanga Hridaya, under the title 'Tibb-a-Shifa Mahmood Shahi.'

Throat Speculum:

Illustration by Sri R. Sree Gopal, based on the description in Astanga Hridaya.

The description is as follows:

This is one of the Nadiyantras described in Astangahridaya and Astangasangraha. This instrument should be ten fingers long and five fingers broad, and is used for the examination of a Salya (foreign body) struck in the throat.

Nasal insufflation:

Illustration by Sri R. Sree Gopal, based on the description in Astanga Hridaya.

The description is as follows :

...... to such person, one should administer the medicine, which has been heated in hot water bath, into the nostrils one after the other, after closing the other nostril, by a pranadi (tubular instrument) or by cotton.

EARLY MEDIEVAL PERIOD

Operation on the head of king Bhoja (11th century):

Original painting drawn by Sri R. Sree Gopal, based on the description in "Bhoja Prabhanda" by Pandit Ballala.

King Bhoja was suffering with severe pain in the head. All the available medical aid of the time was tried in vain. Two brother physicians who came to the kingdom of Bhoja, carefully examined the king and stated that the royal patient, cannot be cured except by surgical treatment. The king consented to be operated. The physicians administered an anaesthetic called "Mohachurna" and when he was completely under the influence of the drug, they trephined his skull and removed a tiny clot from the head, which was the actual cause of the complaint and closed the opening with Sandhanakarani (a herb capable of rejoining the cut bones). Then the king was made to regain consciousness by the application of a restorative known as "Sanjivani".

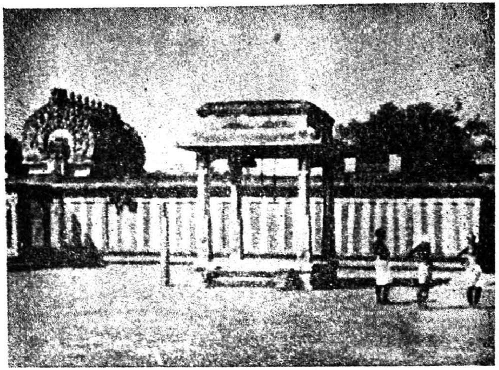
Tirumukkudal Temple (11th century)
(Chingleput Dist., Tamilnadu)

Photo of the temple:

This temple which is dedicated to Lord Venkateswara contains an inscription on the walls of the inner sanctuary. The inscription of the Chola king Veera Rajendra Deva, mentions a hospital, a school, and the expenses for maintaining the hospital and for the festivals of the deity.

The hospital named as Shree Veera Choleswara Hospital contained 15 beds. Attached to the hospital were a physician-surgeon, two male and female nurses, one servant, one gate-keeper, one washerman and a potter. The remunerations were fixed in the form of grain. The duty of the male nurses was to bring herbs and fire wood and prepare medicines, whereas the

female nurse's duty was to administer doses, feed the patients and do cooking. The washerman washes the clothes and the



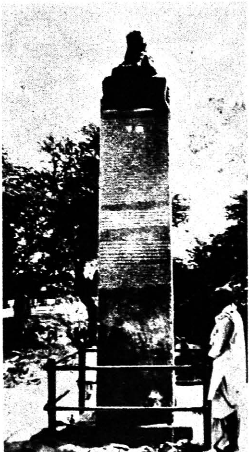
potter supplies the needed pottery. The quantity of the drugs to be stored as well as the oil required for lighting the lamps was also mentioned in the inscription.

Malkapura Sasanam (13th century A. D.):

Photo of the stone pillar at Malkapuram near Guntur, containing a medical inscription.

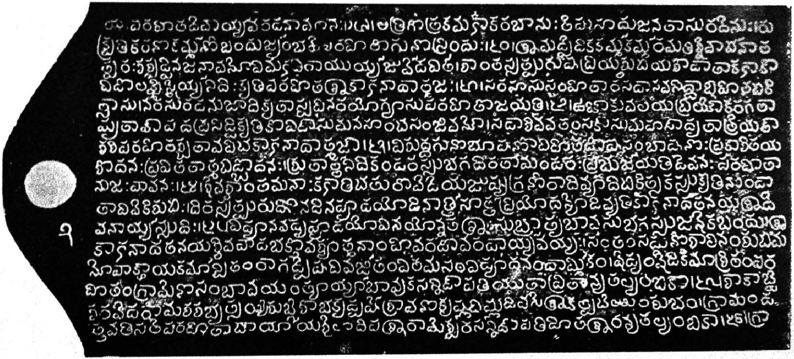
This inscription on a massive stone pillar dated 1262 A. D., contains references to Visweswara, a Saivite preceptor of Kakatiya queen Rudramma and her father Ganapati Deva. The inscription mentions that several villages were donated to Vishweshwara by Kakatiya Ganapati and Rudramma. The income from these villages was used for the maintenance of a maternity home, a hospital and a school. These were associated with the local Siva Temple.

Operation on the head of Bhoja



Malkapura Sasanam

Plate XX



A leaf from the copper plate grant to Parahitarya

Parahita Family:

A copper plate inscription mentioning a grant to a physician.

The Grant.

Kaluvacheru grant of Annathalyambika refers to the donation of the village, Kaluvacheru (East Godavari District) to a physician Parahitharya. The inscription is significant only on account of the recipient being a physician. Text of the inscription is in Sanskrit verses. The authenticity of the inscription has been accepted by all the Andhra historians and the date of the same is 1423 A. D., from undisputable internal evidence. The donor Annathalyambika was the queen of Virabhadra Reddy a king of the Kondaveedu dynasty. The recipient, Parahitharya, was a member in the sixth generation of a famous line of physician-surgeons of proved ability.

The Family of Physicians:

The six generations of physician-surgeons belonging to a single family lived in Andhra country during the period from 1250-1450 A. D. Service to living beings was their motto. One of them could take pity on a cobra in distress and affords relief to it. This is a unique example in the history of Ayurveda and unparalleled in the history of medicine in India or elsewhere.

The following geneological line of Parahitha family can be built up from the data available in the inscription.

PARAHITHA
|
MALLINATHA
|
PARAHITHA (celebrated physician-surgeon who treated a cobra)
|
SRI RAMANATHA
|
VISWA PARAHITHA — DEVANARYA — SRI KALANATHA
|
PARAHITA (Recipient of the grant of the village Kaluvacheru in 1423 A. D.) — DEVANARYA — VARADARYA

Translation of Extracts from the Inscription :

" A physician-surgeon Parahitha by name lived in the Andhra country. He could cure all ailments. He had a son named Mallinatha, who was a great physician. Mallinatha had a son whose name was Parahitha. This Parahitha was a great devotee of Lord Siva. He lived a pure life. This Parahitha, once saw a cobra suffering with a long bone stuck up in its throat. It was not able to bring its jaws together or to swallow and was thus put to unbearable sufferings. Parahitha was moved with pity. He approached the cobra and treated it without any hesitation or fear and relieved it from the suffering. By his act of kindness to the poisonous cobra Parahitharya's name came to be literally true in his case. Therefore, it became a family name. Parahitharya was a well read man in all the Vedas. His son was Sri Rama Natha, who was unequalled in learning. He had three sons. They were known as Viswa Parahitha, Devanarya and Sri Kalanatha. Sri Kalanatha was known as Master-physician and had three sons, Parahitharya, Devanarya and Varadarya. Parahitharya is the eldest of the three and is the recipient of the grant. He belongs to the long line of descendents of the sage Athri. He is religious in outlook. He performs, in time, the duties ordained in the Vedas for him. He is popular, kind hearted, well versed in arts, well versed in the treatment of all living beings, both men and animals, of all ailments, whether their root cause is illness or poison or psychic disturbance caused by ghosts. Parahitha Vaidya is proficient in the use of all medicines which are at his command. He is pleasing in appearance and is like the full moon in bringing cheer to all.

FOLK MEDICINE IN MEDIEVAL TIMES

Hariti (8th or 9th Century A. D.):

A Gandhara sculpture showing Hariti, nursing a baby and surrounded by infants.

Hariti figures as one of the malignant spirits connected with diseases of children in Buddhistic and Ayurvedic literature. She was also regarded as the protector of children from the dangers of epidemics. Sometimes she was associated with small-pox.

Saptamatrukas:

Photo of a sculpture (11th to 13th century A. D.), from the Archaeology Museum, Hyderabad.

The Saptamatrukas or Seven mothers figure prominently in the folk lore; as healing goddeses if propitiated and to inflict diseases when they are angry. They are known by the names Parvati, Saraswati, Lakshmi, Varahi, Indrani, Chamundi, and Yami.

Navagrahas:

(a) *A sculpture slab (11th to 13th century A. D.) from Archaeology Museum, Hyderabad.*

(b) *A sculpture from Uttar Pradesh.*

The Navagrahas or nine planets are supposed to cause several illnesses and innumerable troubles if they are not properly worshipped or when they are angry. They are generally treated as malevolent and are worshipped to spare the worshippers from the troubles and diseases.

Sanskrit Medical Manuscripts:

•

Photo copies exhibited in the Museum.

1. **Susruta Samhita**

   Palm-leaf manuscript, 1,000 years old
   Language : Sanskrit
   Script: Devanagari
   From Palace Library, Nepal.

2. **Bower Manuscript** :
   Bhurjapatra Manuscript Language. Sanskrit
   Script: Devanagari Date of MS.: IV CenturyA.D.
   Probably, it might have been written in Kashmir.
   It was discovered by Major General L.H. Bower, in Eastern Turkestan.

3. **Kacchaputa Tantra** :
   Author: Siddha Nagarjuna Paper Manuscript
   Language—Sanskrit. Script—Devanagari.
   From Library of Bharata Gunavardhaka Samstha, Shaali Banda, Hyderabad.

4. **Chikitsasarasangraha** :
   Date of MS: About 1320 A. D.
   Author : Vangasena.
   Oldest Paper M.S. according to Prof. P. K. Gode.
   From Bhandarkar Oriental Research Institute, Poona.

5. **Bhava Prakasha** :
   Date of MS. XVIth century, Paper MS.
   Language—Sanskrit. Script : Devanagari.
   From Tubingen University, Germany.

6. **Siddhasara** :
   Date of M.S. 900 A.D.
   Paper M.S., Script : Devanagari.
   From Government Oriental Manuscripts Library, Madras.

7. **Todarananda Ayurveda Saukhya :**
XVIth century, • Paper MS.
This is a section on Ayurveda in the encyclopaedic work of Akbar's reign, entitled Todarananda.
From Sanskrit College, Calcutta.

8. **Charucharya :**
A treatise of XIth century. Palm-leaf Manuscript.
Language: Sanskrit. Script: Devanagari.
From: Asiatic Society, Calcutta.

9. **Ayurvedabdhisara :**
Date of M.S. 1831 A.D.
Author: Anonymous:
Paper M.S. Language : Sanskrit.
From Sanskrit Academy, Osmania University, Hyderabad.

10. **Vaidya Chintamani** :
Author : Vallabhadeva. Language: Sanskrit & Telugu.
Script : Telugu. Palm-leaf MS.
From State Central Library, Hyderabad.

11. **Navagraha Chintamani** :
Paper MS. Script and Language: Telugu.
From State Central Library, Hyderabad:

12. **Rajayogasaramu :**
Date of MS.: About 200 years old.
Palm-leaf M.S. Script: Telugu.
From Salarjung Museum Library, Hyderabad.

13. **Aushadha Yogalu :**
Script and Language: Telugu.
From State Central Library, Hyderabad.

14. **Ramachandrika** :
17th Century.
Paper Manuscript. Script : Devanagari.
Author: Unknown. Date of M.S. 100 years old.

Development of Ayurvedic Medicine in India

Century	*Physicians - Books and medical centres.*
8th-6th B. C.	Bharadwaja teaches Ayurveda to Atreya in Himalayan retreat. Atreya - Physician and Professor at Takshasila. Agnivesa - Agnivesa Samhita. Bhela - Bhela Samhita. Harita - Harita Samhita. Divodasa (Varanasi) - Teacher to Susruta. Susruta - Susruta Samhita. Kashyapa - Kashyapa Samhita.
500 B. C.	Jeevaka - Physician to Buddha (Magadha).
320 B. C.	Kautilya's Arthasastra describes Royal Physicians, Herbariums, and army Surgeons.
250 B. C.	Asoka - Edicts describe establishment of dispensaries and hospitals in different parts of his empire and in border States.
1st century A. D.	Charaka - Court Physician to Kanishka-Charaka Samhita (the revised Agnivesa Samhita)
2nd ,,	Nagarjuna - Friend Physician and Philosopher to the Satavahanas -Revised Susruta Samhita - Fever Hospital in Vijayapuri (Nagarjunakonda Excavations).
4th ,,	Fa Hian describes about Hospitals in Pataliputra and in other towns and cities of Gupta Empire.

Century	Physicians,- Books and medical centres.
7th Century A. D.	Vagbhata – Astanga Sangraha and Astanga Hridaya. Nalanda, a great centre of learning - Chinese pilgrims came to study medicine at Nalanda.
8th ,,	Madhavakara - wrote Rugbinishchaya.
9th ,,	Ugradityacharya - Wrote Kalyanakaraka.
10th ,,	Village and Town dispensaries in Chola Kingdom. Vrinda wrote Sidhayoga.
11th ,,	Chakra Datta (Bengal) wrote Chikitsasara Sangraha and also commentaries on Charaka and Susruta.
12th ,,	Hospitals and Medical Schools attached to Temples. Sodhala - Guna Sangraha King Someswara III (Western Chalukyas) wrote Abhilashitharthachintamani. Vangasena – Wrote Chikitsasara Sangraha. Dalhana - Wrote commentaries on Susruta.
13th ,,	General Hospitals and Maternity Hospitals at University Centres in Andhra. Milhana - Wrote Chikistamrita. Vopadeva - Wrote Shata Sloki. Works on Rasa and Rasendra. Yasodhara - Wrote Rasaprakasa Sudhakara. Sarangadhara - Wrote Sarangadhara Samhita. Vijayarakshita - Wrote Nidana. Somadeva - Wrote Rasendrachudamani.

Century	*Physicians - Books and medical centres.*
14th Century A.D.	Ramachandra Somayaji - Wrote Nadipariksha. Madanapala - Wrote Madanavinoda. Works on Rasa and Rasendra. Ravigupta - Wrote Siddha Sara Samhita. Merutunga - Wrote commentary on Kankalaya Rasadhyaya. Gopalakrishna - Wrote Rasendrasara Sangraha. Parahita Samhita - Composed by Srinatha, court physician in Andhra. Prithvimalla - wrote Sisurakshharatna.
15th ,,	Momahana - Wrote Momahana Vilasa. Trimalla- Wrote Vaidyachandrodaya, Vrittamanikyamala and Alankaramanjari. Kayasthachamunda - Wrote Jwarathimira Bhaskara. Nityanatha - Wrote Rasaratnakara.
16th ,,	Bhava Misra - Wrote Bhavaprakasha. Kayastha Lokanatha - Wrote Mallaprakasha. Todarananda - Has a section on Medicine. Madhava - Wrote Rasakaumudi. Lolimbaraja - Wrote Vaidyajivana Vaidyavatamsa - Chamatkarachintamani - Lolimbarajakhyana. Yoganandanatha - Wrote Ayurveda Sutra. Viswanatha Sena - Wrote Pathyapathyavinishchaya.

Century	Physicians - Books and medical centres.
16th century A. D.	Moreshwarabhatta - wrote Vaidyamrita. Ravana wrote - Arkaprakasha. Deveshwaropadhyaya - Wrote Strivilasa.
17th ,,	Mitra Misra - Wrote Viramitrodaya. Maniram Misra - Wrote Gunaratnamala. Sankara - Wrote Vaidyavinoda. Harshakirtisuri - Wrote Yogachintamani, Vaidyakasara Sangraha. Hastiruchi - Vaidyavallabha. Karpuriya Shivadatta - Wrote Shivakosha. Bhaskarabhatta - Sharirapadmini. Naganatha - Wrote Nidanapradipa. Raghunatha Pandita-Wrote Chikitsamanjari. Vaidyapathi - Wrote Vaidyarahasya Kavichandra - Wrote Chikitsaratnavali. Jagannatha - Wrote Yoga Sangraha.
18th ,,	Madhava-Wrote Ayurveda Prakasha. Madhavadeva - Wrote Bhavasvabhava. Devadatta - Wrote Dhaturatnamala. Balarama - Atankatimirabhaskara. Narayana - Wrote Rajavallabhiyadravya-guna. Ananta - Wrote Pratapa Kalpadruma. Kasirama - Wrote Ajirnamanjari. Govindadasa - Wrote Bhaishajyaratnavali. Vaidyaraja - Wrote Sukhabodha.

LATE MEDIEVAL PERIOD

UNANI MEDICINE

Unani Tibb is that system of Greek medicine, which had developed in west Asia during the Arab civilization. It is still called by the Asians as Unani (Ionian) medicine, whereas the European historians call it Arabian medicine.

According to George Sarton, the Arabic medicine was a continuation of and revivification, not only of Greek science but also had its foundations in old Iranian and Hindu medicine. Though the Arabian medicine was greatly influenced by both Greek and Indian systems before it reached India, it had developed soon into a distinct system and later came to be known as the Unani System.

Advent and development:

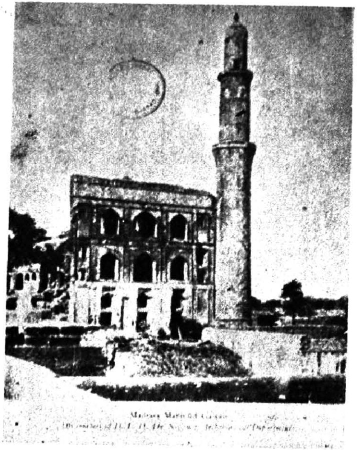
The Muslim conquerors of India from north-west brought with them hakeems and Arabian system of medicine, which spread slowly throughout India during Mohammedan rule. Though, Unani Physicians might have reached India and some of them settled down temporarily in some cities in the north in Sindh and Punjab from the 8th century or 10th century A. D. onwards, the earliest allusions to hakims or physicians and to Unani books, etc. in India, are available only from the 13th and 14th centuries.

The earliest name of a unani medical writer in Deccan is that of Zia Mohammed Gaznavi who compiled 'Mazmoo-a-Zia-e' in the reign of Mohemmad bin Tughlak. In the middle of the 15th century, a hospital was built at Mandu. Later, in 1452, Alla-Uddin-II, ruler of Bahmani kingdom built a hospital. Mohmood Gawan, the great prime minister of

Bahmani Kingdom built a Madrasa or college for teaching all branches of Islamic learning, including medicine, by scholars from Persia. In Gujarat under the patronage of the Muslim kings, Vagbhata's 'Astanga Hridaya' was translated into Persian in 1474 under the name "Tibb-e-Shifa-e- Mohammad Shahi". In the first quarter of the 16th century, under the patronage of Sikander Lodhi, the Sultan of Delhi, a great integration of all existing knowledge of medicine in Ayurvedic and Unani systems was achieved under the title 'Madenush-shifa Sikander Shahi'. Baber brought with him a number of physicians from central Asia, among whom Yousuf-ul-Tabeeb who compiled a number of books during the reign of Baber and Humayun was most prominent. Later, when Humayun returned from Persia, and when Akbar ascended the throne, more Hakims and learned men came from Iran. But, Ayurveda was not completely neglected, though there was no progress and development. There were also Hindu surgeons and physicians in Muslim courts The famous encyclopaedia of Todarananda prepared under the patronage of Raja Todermal contains a summary of the principles and practices of medicine at that time. During Jahangir's time the first British physician reached Delhi, but the Unani system continued to flourish. Hakim Amanullah Khan, also known as Khan Zaman was a high official during the reigns of Jahangir and Shah Jahan. He translated into Persian a Sanskrit treatise on Materia-Medica, called 'Madana Vinoda' by king Madanapala. The Persian version was entitled, 'Gunje Badh Awurdh'. During Shah Jahan's reign, Ain-ul-Mulk Shiraji, wrote a learned treatise on Materia Medica, 'Alfazul-Adwia' which was translated into English in the later half of the 18th century.

Under the patronage of Muslim rule in India, Unani Tibb developed tremendously and several books on Unani sytem were written in India and medical books in Arabic and Persian were freely translated respectively into Persian and Urdu, for the benefit of indigenous hakims.

Persian Physician with Patients



Mohmood Gawan's Madrasa at Bidar

Allauddin II of Bahmani

The Ayurvedic and Unani systems began to borrow from each other. The Unani system struck roots and came to stay in India, as a distinct branch of Indian medicine. Its development was however retarded, when the European physicians began to flourish in India, in the territories of East India Company, from the middle of XVIII century.

Persian Physician with patients : (13th century)

From a MS. 'Khawassu'l-Hasha'ish wa Manafi'u'l-Hayawan, in the Salarjung Museum, dated 1280 A.D.

The painting shows the physician sitting in his 'Chanba' and feeling the pulse of a patient. Another patient brought in the hands of a lady is waiting to be examined. The physician's aids are preparing drugs.

Allauddin II of Bahmani (1435–1458) :

Photo of a Deccani Painting

According to Ferishta, Allauddin II, built in 1452 A. D. a hospital, at Bidar which provided free treatment including medicines, drugs and food to the patients. He appointed both Muslim and Hindu physicians and surgeons to attend the patients. A number of villages were granted for the maintenance of this hospital.

Mohmood Gawan's Madrasa at Bidar (15th century) :

Photo of the original building in ruins.

Mohmood Gawan, a Persian, who became the prime minister, in the court of the Bahmani kings, spent all his earnings for the charitable deeds. He established a great college, "the Madrasa" and invited scholars from all parts of the Islamic world to participate in the activities of the higher Institution of learning. He was a very able man and was proficient in Philosophy, Logic, Astrology, Mathematics, and Medicine. The Library of the college possessed a collection of

3,000 books. A medical manuscript belonging to Md. Gawan entitled 'Risa-el-a-Jalinoos' was also found there. The college provided for the teaching of various arts and sciences including medicine. The building is still existing at idar, though in ruins.

Baber's Illness

Photo of a Moghul Painting

The picture shows Baber lying on the bed. Two hakeems are sitting in front of him and at the backside medicines are being prepared. An attendant is weeping while others are discussing various matters. At the gate, nobles with their horses are waiting for the news of the Emperor's condition.

The writing on the picture reads thus :

" The physicians sprinkled me with water and all those who were with me small and great, despairing of my life, were each engaged in looking after their own concerns."

Humayun's Illness :

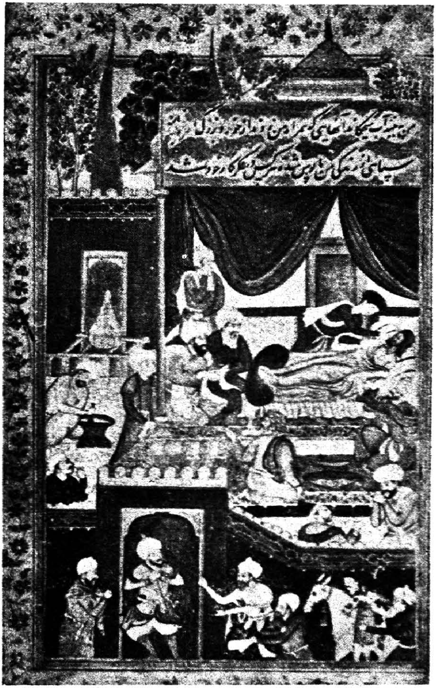
Photo of a Moghul painting

In the picture Humayun is lying on the bed. A hakeem is feeling the pulse of the sick prince while one of his assistants is administering medicine with a spoon. Some of the nobles are anxiously looking at the Prince.

The story of Humayun's illness is as follows :

Humayun, the eldest son of Baber, lay dying. Baber decided to follow an old custom and sacrifice his most precious possession in exchange for his beloved son and so with due ritual, he offered his own life, the thing he valued most to the God almighty, by circumambulating round the sick bed of his son. The son recovered and not long afterwards, Baber fell ill and died at the age of 40 in the year 1530 A. D.

Plate XXIII



Baber's illness

Humayan's illness

Akbar with his Navaratnas

Emperor Akbar (1556-1605 A D.) along with his Navarathnas (Nine Diamonds) :

Photo of a Moghul painting

The Navaratnas are the most high ranking nobles of Akbar's court. They are : (1) Hakeem Hammam, (2) Raja Todar Mull, (3) Raja Mansingh, (4) Raja Bir Bal, (5) Molla Dopeaza, (6) Faizy, (7) Abul Fazl, (8) Mirza Tansen and (9) Nawab Khan-i-Khanan (Bairam Khan).

Hakeem Hammam was a famous physician of Akbar's court.

Garcia D' Orta (Portuguese Physician) treating the sick prince of Ahmednagar, during the reign of Burhan Nizam Shah (16th Century A. D.) :

Original painting drawn by Sri R. Sree Gopal under the directions of Dr. D. V. Subba Reddy.

The Portuguese physician describes the incident when the prince fell ill with fever. Garcia D' Orta, a friend of the King was called for consultation and suggested bleeding him. But the Unani and Hindu physicians attending on the prince, opposed the suggestion. Due to excessive heat, the prince developed skin eruptions, which the Unani and Hindu physicians supposed to be small-pox and began to give small-pox treatment, though the prince had no small-pox. Becuase of the treatment, a severe rash came out on his body. Even after 14 days of treatment, neither the fever subsided nor were there further signs of small-pox. Then, Garcia D' Orta bled the prince twice and gave him a fowl to eat. At the end of 20 days, the prince recovered fully.

This is an early instance of an European physician attending on an Indian prince.

Dar-Us-Shifa : The first Hospital in Hyderadad : (1595)

(*a*) *A photo of the painting of Mohammed Quli, Qutb Shah IV, who founded the city of Hyderabad and built a hospital known as Dar-us-Shifa.*

(*b*) *Valous views of Dar-us-Shifa.*

(*c*) *Reconstruction of Dar-Us-Shifa : Pencil sketch by Sri M. G. Hussain.*

(*d*) *A plaster of paris model of Dar-Us-Shifa prepared by Sri R. Sree Gopal.*

Dar-Us-Shifa or 'House of Cures' was the first hospital built in Hyderabad in 1595 A.D., on the southern banks of the river Musi, by Sultan Mohammed Quli, Qutb Shah, the founder of the city of Hyderabad. It was a two-storied building and had 40 rooms, each of which accomodated 4 or more beds. The whole building occupies about 25,000 sq. ft. and was built in an open space outside the city, to provide fresh air. The building was one of the grand structures in the history of hospitals in the world.

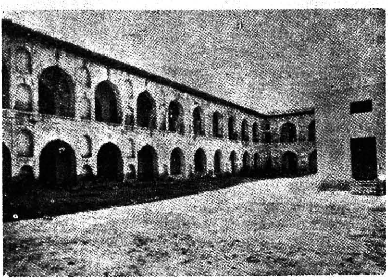
The hospital was intended (1) for the treatment of the patients and (2) for imparting medical education to students. Two types of physicians (a) experts meant to look after the sick and treat them and (b) scholars learned in the branches of science and medicine, appointed exclusively to impart instruction in medicine to students, were appointed in the hospital. The physcians were well paid and large sums were budgeted for the purchase of medicines and equipment. All medicines, diets and attention were provided free of cost. A caravansarai, a mosque and a turkish bath were constructed near the hospital as adjuncts. It served as a free hospital and as medical college for more than a century.

This hospital has been described in the Tarikh-i-Qutb Shahi and in Mahnama.

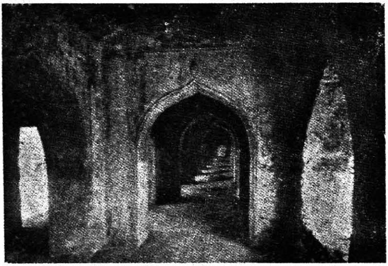
Portuguese Physician attending on the Ahmednagar Prince

Mohd. Quli, Qutb shah IV the builder of Dar-us shifa.

DAR-US-SHIFA—HOUSE OF CURE



A view of the inner facade of the building from the central quadrangle. There is a long corridor with arches, opening into the quadrangle.



A view of the interior of the Eastern wing. There is a long central hall, with square areas formed by the arches on all the 4 sides with an arched roof These compartments were probably used, as separate wards for the accomodation of inpatients. All along the innerside of this long hall, there is a cor idor with arches as a common passage and a similar corridor, also all along the outer aspect.

Illness of Sultan Mohammed, Qutb Shah V

Deccani Hakim (XVII Century)

بسم الله الرحمن الرحيم

قال الشيخ الرئيس الحمد لله رب العالمين وصلواته على أنبيائه ورسله أجمعين

The first page of the first volume of the manuscript, "Sherh-a-Qanoon" a commentary on Avicenna's Canon, by Ali Jeelani, one of the courtiers and physicians of Akbar's Caurt The Manuscript is in the Library of Government Nizaminh Unani Tibbi College, Hyderabad.

Illness of Sultan Mohammed Qutb Shah V:

Original painting in colour prepared by Sri R. Sree Gopal, under the guidance of Dr. D. V. Subba Reddy.

The painting shows the king, being attended by Unani and Indian Physicians. His mother Hayat Baksh Begum is watching from behind a purdah.

The king was attacked with high fever at the age of 34. The physicians who were called upon to treat him were puzzled, owing to his high temperature and held divergent opinions about the nature of the disease and method of treatment. The Unani physicians suggested cooling drugs, whereas the Indian physicians prescribed heat generating drugs. The King's mother approved the latter course, which further raised the temperature, ending in the death of the king.

A Unani Hakeem of Deccan (Medieval Period):

Photo of a painting - Deccani School.

The painting shows the peculiar garments of the physician.

Documents from State Archives.

(Last quarter of 18th century)

(*a*) *Photostat copy of an office note.*

The note bears the *Nizam's* endorsement in his own hand, stating the request of Moulvi Qutubuddin, for a grant on monthly basis for the maintenance of the Dar-us-Shifa, where the destitute patients are fed and given free treatment under the supervision of the aforesaid physician. The Nizam sanctions a monthly subsidy of rupees one hundred from the revenue of the city imposts.

(*b*) *Nizam's order sending two Hakeems.*

Nawab Salabat Khan wrote from Ellichpur to nawab Arastu Jah Bahadur, representing that his wife was seriously ill and on the latters petition the Nizam ordered that two hakims selected by himself should immediately proceed to attend, on the nawab's wife.

Salabat Jung was the brother of Nizam Ali Kahan; NizamII.

Arastu Yar Jung was the prime Minister.

ARABIC AND PERSIAN MEDICAL MANUSCRIPTS

(a) paper MSS. Exhibited in the Museum.

Al-Qanoon (Canon) :

Author: Ibn Sina (Avicenna)
Place and Time: Iran, compiled in 1025 A. D. Calligraphed in 17th century.
Language: Arabic.
There are two volumes which contain 1, II, IV and V parts (Part III missing).

Kitab Gina Wa Muna :

Author: Abu Mensoor-ul-Hasan bin Nooh-ul-Qemri, teacher of Avicenna.
Place and Time: Iran, 10th century A.D., Calligraphed in 18th century.
It contains three Maqalas on various diseases.

Sherhul Asbab Wal Alamath: (Annotation on signs and symptoms)

Author: Nefees Bin Avez Bin Hekeem-al-Tebeeb.
Place and Time: Samarkhand, 1425 A.D.
Language: Arabic.
It is a commentary on Unani medical manuscripts on Asbab Wal Alamath of Najeebuddeen Abu Hamid Muhammed Bin Ali Semarqendi.

Zia-Ul-Ooyoon :

Author : Hakeem Aynul Mulk Sheerazi of Akbar's court.
Place and Time: Delhi, 16th century A.D.
Language . Persian.
It is a treatise on Ophthalmology.

Destoor-Ul-Atibba :

Author : Md. Qasim Firishta, the famous historian.
Place and Time: Bijapur, Deccan. 1590 A. D.
Language: Persian.
It deals with principles of medicine, simple drugs, compound drugs and climatic divisions of the land.

Riyaz-a-Alamgiri :

Author: Md. Reza Tebeeb.
Place and Time: Delhi, 11th Century A.D.
Language: Persian.

It deals with the causes, signs, symptoms and the treatment of diseases.

Yusrul Ilaj :

Author: Hakeem Hida-etullah.
Place and Time: Delhi, 1731 A.D.
Language: Persian.
It is a treatise on hygiene, medicine and cheap medical prescriptions.

(b) Photo copies of MSS. Exhibited in the Museum

Resa-el-a-Jalinoos : (Magazines by Galen):

Author: Hunain bin Ishaque.
Place and Time: Iraq, 2nd century A.D.
Language: Arabic.
Found in Bidar with the seal of Mohammed Gawan. It contains chapters on anatomy, pulse, ophthalmology, medicine and different schools of medical thought.

Firdus-ul-Hikmat :

Author: Ali bin Rabban Tabari.
Place and Time: Baghdad, about 9th century A.D.
Language: Arabic.
From the British Museum, London.

Zekeera-n-Quarzem Shahi :

Author: Ismail bin Hasan Jurjani.
Place and Time: Central Asia, early 12th century A.D.
Language: Persian.
It deals with all human diseases, wounds, fractures and dislocations and bears the seal of Rafi-ud-Doula.
From the Salarjung Library, Hyderabad.

Mejmoo-a-Zia-e :

Author : Zia Mohammed Mubarek.

Place and Time : Deccan, 14th century A. D.

Language : Persian.

It is a collection of various medical authors.

From the State Central Library, Hyderabad.

Sherh-a-Qanoon :

Author : Shamshuddin Mohammed Amli.

Place and Time : Deccan, 1501 A.D.

Language : Persian.

It was an earlier commentary on Canon. Found in the Library of Mohammadabad (Bidar), when it was conquered by Naures Ibrahim Adil Shah, in the year 1618 A. D.

Jame-ul-Fewa-ed :

Author: Ibn-a-Mohammed bin Yousuf-ut-Tabeeb-ul-Harwi, known as 'Yousufi'.

Place and Time: Delhi, during the reign of Baber and Humayun. Calligraphed in 1738 in Deccan.

Language : Persian.

The copy of the manuscript was acquired from the private library of Mumtazul-Umera, chief of Kalyani state.

Zekeerai Nizam Shahi :

Author: Hakeem Rustum Jurjani.

Place and Time : Ahmednagar, Deccan. 1548 A.D.

Language : Persian.

Ikhtiarat-a-Qutub Shahi :

Author: Mohammed Momin and other scholars of the court of Qutb Shah IV.

Place and Time: Deccan, 16th century A.D.

Language : Persian.

It contains the names of the herbs and drugs in Arabic, Persian and Urdu languages.

Tezkiretul Kehhaleen :

Author: Shamshuddin Ali-ul-Hussainiul-Jur-Jani.

Place and Time: Deccan, during the time of Sultan Quli Qutb Shah, 16th century.

Language: Persian.

It deals with the eye diseases and their treatment.

Sherh-a-Qanoon: (Annotation of Cannon).

Author: Hakeem Ali Jeelani. the famous Physician, mathematician & engineer, also called the Galen of the age.

Place and Time: Delhi, 1600 A.D.

Language: Arabic.

It is a commentary of Avicenna's Cannon.

Tibb-a-Dara Shikohi :

Author: Meseehuz-Zema Hakeem Nooruddeen Mohammed.

Place and Time; Delhi, 1645 A.D.

Language: Persian.

The book was dedicated to Dara Shikoh, son of Shah Jahan.

The manuscript is a combination of Unani and Indian medicine. From the Asafia Library, Hyderabad.

Ber-us-Sa-aw. (Cure in an hour).

Author. Hakeem Mohammed Mohiuz-Zeman-al-Hussaini, also known as Hakim Mohammed Massom Khan.

Place and Time : Deccan, 1767 A.D.

Language: Persian.

It is a translation of the original Arabic work by Rhazes.

DEVELOPMENT OF ARABIAN OR UNANI MEDICINE IN INDIA°

Sl.No. (1)	Period or Century (2)	Kingdom or City (3)	Names of Physicians or Books compiled or Horpitals built. (4)
1.	1282 A.D.	Sultan Jalaluddin Khilji.	Shah Quli- Wrote Risale-a-Fairoaz Shahi.
2.	1325-1352 A.D.	Mohammed bin Tughlak	Established hospitals in Delhi. Zia Mohammed Gaznavi-Wrote Mejmoo-a-Zia-e (in Telangana District).
3.	1352-1388 A.D.	Sultan Feroz Shah	Established hospitals in Delhi and other cities.
4.	1422-1434 A. D.	Ahmed Shah Wali Bahmani.	Translation of the treatise of Salihotra from Sanskrit to Persian.
5.	1435-1458 A. D.	Allauddin II of Bahmani.	Built a hospital in Bidar-Appointed Ayurvedic and Unani physicians.
6.	1446 A.D.	Sultan Mohamood Shah.	Built a hospital in Mandu.
7.	1474 A.D.	Sultan Mahmood Shah of Gujarat.	Ali Mohammed bin Ali Ismail Asaveli Aseeli-Wrote Tibbe Shifa Mahmood Shahi.
8.	1513 A.D.	Sultan Sikander Lodi.	Behwa bin Qewas Khan-wrote Meden-us- Shifa Sikander Shahi.
9.	1537 A.D.	Sultan Bahadur Shah of Gujarat.	Zainul Abideen (Mulla Mir Tabeeb)-Wrote Faizia.
10.	1530-56	Humayun s/o Baber.	Moulana Yousufi- Wrote Riazul Adwia.

(contd)

11	1556–1655	Akbar.	Akbar also built hospitals. Hakeem Abul Fateh Gilani-Wrote Sherhe Qanooncha and 3 other books. Hakeem Ali Gilani-Wrote Sherhe Qanoon and one other book. Hakeem Shaik Hasan Panipati (famous surgeon) -Wrote Ainush Shifa. Hakeen Ainul-Mulk Sheerazi-Wrote Alfaz-ul-Adwia and 3 other books. Hakeem Meqsood Ali-Wrote translation of Tareeqe Hukema(1593 AD). Hakeem Fethullah Gilani-Translated Qanoon from Arabic to Persian (1594).
12	1550-1581 A.D.	Ibrahim Qutub Shah III	Built a hospital at Golconda.
13	1581-1611 A.D.	Sultan Mohammed Quli Qutub Shah IV	Built Dar-Us-Shifa at Hyderabad. Taqiuddin Mohammed bin Sadruddin Ali, wrote Meezanut Teba-a-Qutub Shahi, Mir Mohammed Momin Bin Ali, wrote Iqtiarate Qutub Shahi and Risale-a-Miqdaria.

(contd)

14	1612–1630 A.D.	Sultan Mohammed Qutub Shah V	Shamshuddin Ali-Ul-Hussaini-Ul-Jurjani, wrote Tezkiretul Kehhalin.
			Mohammed Shah, brother of Quli Qutub Shah translated Kok Shahster from Sanskrit to Persian poetry.
15	1605-1628 A.D.	Jahangir	Hakeem Amanullah Khan, wrote Gunje Badh Awurdh.
16	1628–1658 A.D.	Shah Jahan	Syed Abdullah Khan, wrote Feres Namah.
			Nooruddin Mohammed, wrote Tibbe Dara Shikoh
			Shah Jehan built a hospital near the big mosque in Delhi.
17	1630–1672 A.D.	Abdullah Qutub Shah	Hakeem-ul-Mulk Nizamuddin Ahmed Gilani, wrote Mejmoo-a-Hakeem-ul-Mulk and " Asle Museffa ".
			Mohammed Shah (a courtier of Abdullah Qutub Shah), wrote Lezzet-un-Nisa, and four other books.

(contd)

18	1659–1707 A.D.	Aurangazeb	He built hospitals in Surat and other big towns.
			Hakeem Mohammed Akbar known as Mohammed Arzani, wrote Tibbe Akbar and 3 other books
			Hakeem Mohammed Asqhar (brother of Hakeem Arzani), wrote Mujerebate Akmali
			Hakeem Shaik Ahmed Qenoji, wrote Tohofetul Atibba
			Mohammed Riza Sheeraz, wrote Reaze Alamgiri (1677 A.D.) Its 2nd part is called Riaze Menazir
19	1719–1748 A.D.	Mohammed Shah	Hakem Ulvi Khan, wrote Kitabun Nebath (Arabic) and three other books.
20	1748–1754 A.D.	Ahmed Shah	Hakeem Sikander, wrote Qerabadeene Hakeem Sikander.
21	1759–1806 A.D.	Shah Alam II	Hakeem Shereef Khan, wrote Asrarul Ilaj and four other books.
			Hakeem Razi Khan, wrote Tewa-e-day Maida
22	1781–1799 A.D.	Tippu Sultan of Mysore	Muferedate Tibb, Behrun Nafay and Tohofe-a-Mohammedia were compiled.

23	1821 A.D.	Feroz Jung (son of Asaf Jah I)	Hakeem Abdus Salam (known as Hakeem Chammu), wrote Qerabadeene Salaami.
24	1804–1830 A.D.	Sikander Jah Bahadur (Nizam III)	Sheik Hyder Misri wrote Qerabadeene Hindi Hakeem Raza Ali Khan, wrote Yadgar-e-Reze-e- (1823 A.D.) Hakeem Shifa-e-Khan, wrote Risala-a-Shifa-e-Khan and 9 other books, including Moalejate Chandu Lal.
25	1830–1857 A.D:	Nawab Nasir ud Dowla (Nizam IV)	Mohammed Qemruddin Hussain (known as Hakeem Munna), wrote Munteqebul Adwia. Mir Qasim Ali, wrote Kitabul Fewa-ed (1839 A. D.)
26	1857–1869 A.D.	Afzal ud Dowla Bahadur(Nizam V)	Built Afzulganj hospital in 1866.
27	1869-1910	Nawab Mir Mahboob Ali Khan (Nizam VI)	He built Unani Shifa Khana, Unani hospital, Hussaini Alam & Unani hospital at Bairoon Balda: Hakeem Ifteqar Ali Khan, wrote Shifa-un-Linnas and two other books, Hakeem Awsheq Hussain Khan Hyderabadi, wrote Feroage Atibba (Poetry) and Tirya-qus-Sumoom.

MODERN PERIOD

BEGINNINGS OF MODERN MEDICINE IN INDIA

The first European physicians came to India by the Portuguese ships for colonies like Goa etc. There are instances of European surgeons and physicians curing diseases in the Moghul and Deccan courts. With the formation of the Dutch and English East India Companies, these nations also brought their surgeons in their ships for their settlements in India in the 17th century. In the 18th century, many of the English and French surgeons accompanied the armies during wars with each other and with Indian rulers. The chemists and druggist stores were imported by ships to India.

The British physicians were at first confined to the British factories and ships. Later, when the East India Company established its rule in India, many of them stayed in the country for longer periods and set up practice in India.

With the patronage given by the ruling East India Company Government, to the European system of medicine, the older Ayurvedic and Unani systems began to recede into the background in and around the English settlements but retained foothold in the native courts and rural areas.

From 1835, medical schools were started at Calcutta, Madras, Bombay and Hyderabad, which gradually developed into colleges. This was the beginning of the spread of European system of medicine throughout the country.

Plan of Goa :

Photo of the plan of the city of Goa, in 1510 A. D.

The plan shows the early hospitals of the Portuguese along with other buildings. These were the earliest European hospitals in India.

Colloquies on simples and drugs of India (1563) :

The title page of the book by Garcia da Orta, published from Goa in 1563 A. D.

Garcia da Orta, was the earliest European physician, who practised in India and wrote a book on the "Simples and drugs of India". He came to India as a physician on the Portuguese ships, accompanied the Portuguese military in their marches on the west-coast and became well acquainted with the native kingdoms and their medical systems. He was physician to the Viceroy of Goa and had a garden with medicinal herbs in his compound.

In his book, he refers to the conversations he had with Ayurvedic and Unani physicians to understand their principles and modes of treatment. He had a good knowledge of the medicinal herbs within his reach. The book also contains the information gathered from the native physicians, yogees, and traders from all parts of India.

The book which was the first medical work published in India, was printed in Goa in 1563. Later, several editions were published.

China root :

A print reproduced from the English translation of Garcia da Orta's book " Colloquies on simples and drugs of India".

This is an illustration of the plant, China root from Christoval Acosta's book on" The Drugs of India", published in Burgos in 1578. He is said to have copied wholesale from Garcia da Orta, adding a few new plants and remarks.

John Woodall: (1556—1643)

Photo of a woodcut.

After practising for some years at London, he was appointed as 'Surgeon General' to the English East India Company. He was the author of a guide book entitled "Surgeons Mate" (1617), for the use of the ship surgeons of the East India Company.

A page from "Surgeon's Mate":

Photostat copy.

The page gives a note on the particular ingredients and of other necessary appurtenances to be kept in the surgeon's chest.

Jacobus Bontius: (1592-1631):

Photo of a line drawing.

Jacobus Bontius was a Dutch physician in East India and the first writer on tropical diseases. He was appointed by the Dutch East India Company as doctor-apothecary and surgical inspector of Dutch East Indies in 1626. He devoted himself to the study of oriental herbs and tropical diseases. He died at the age of 40 in 1631 as a result of strenuous work and unfavourable climate.

The first edition of his writings was published at Leyden in 1642 with the title "*Jac Bontii, in Indies Archiater, De Medicina Indorum*". Other editions appeared in 1645, 1658 and 1745. The first English edition of his works was published in 1769.

Emperor Shah Jahan granting leave of trade to the English:

A coloured print.

The picture shows Emperor Shah Jahan granting a firman to the English to trade in India, in gratitude to an English Physician, for curing his daughter 'Jahanara Begum', after burns.

The English Factory at Surat (1638):

A picture from the 1658 edition of Mandelslo's "English Factories in India 1634-36".

The sketch shows the E.I.C's first factory founded in 1612-13 by Best and Aldworth. For sometime, it was the chief seat of the

company's possessions in the East. Many surgeons like Fryer were employed in this factory.

Francois Bernier (1620-1688):

Photo of a sketch.

Bernier was a French Doctor of Medicine from Montpellier. In the midddle of the 17th century, he was a physician at the Moghul court. He made a critical study of the Indigenous systems of medicine and also explained to Indian noblemen and pandits the then new discoveries of Harvey and Pecquet.

Peter - de - Lan, a Dutch Surgeon, letting out blood (venesection) in the Royal harem of Sultan Abdullah Qutb Shah VI (17th century):

Original painting in colour by Sri R. Sree Gopal under the directions of Dr. D. V. Subba Reddy, based on the descriptions of the French Traveller, Taverneir.

The painting shows the Dutch surgeon Peter De Lan a representative of the Dutch at Golconda about 1656 A. D., letting out blood from the hand of the queen, sitting behind a purdah.

Earlier, the Dutch surgeon had successfully bled the king at four places under the tongue, to cure his chronic headache. The young queen and queen mother, resolved to be let bled too. The Surgeon bled the royal ladies while they stretched their arms through a curtain.

John Fryer, M.D., F.R.S., (1650–1733):

Photo of a sketch.

He was the most learned factory surgeon of the East India Company in the 17th century. Though he was employed at Bombay and Surat factory, he visited the Coromondel Coast and his observations on Madras are interesting. He wrote about the people round about St. Thomas Mount, one of whose legs was as big as that of an elephant's (Elephantiasis). He also saw people with elephantiasis in Malabar and added a very interesting account of

the causation of the disease. After returning to England, he published an interestiug book "A new account of East Indies and Persia". (1698) He also served the East India Company in Persia.

A new account of East India and Persia :

Photo of the title page of the b ok of John Fryer.

"A new account of East India and Persia" being nine years travels of John Fryer begun in 1672 and finished in 1681.

Hortus Indicus Malabaricus: (Botany of Malabar):

Photo of the title page.

This monumental work was written by Hendrik Adrian Van Rheede, who was in the military service of the Dutch East India Company. He served for some time at Cochin. During that time he had collected and studied a large number of plants with the help of the natives and the Portuguese. The book was published from Amsterdam in 1678, when Rheede was able to spend some of his leisure arranging the botanical notes collected by him in India. The work is in twelve folio volumes with 794 illustrations. The title page indicates that Professor Johannes Munnicks, was joint author of one volume and Abrahamus Appoot, added notes, commentary and Illustrations to another.

Manucci : (1639-1709).

A sketch, showing Manucci, feeling the pulse of a patient.

Nicholas Manucci, an Italian, came to India as an youthful adventurer in 1655 and became a gunner in the Moghul army under Dara Shikoh. Later, he adopted medicine as a profession, apparently without any training or knowledge and set up as a Physician at Lahore (1671-78) Delhi (1678-82) and Golconda. In 1686, he reached Madras and settled as a private practitioner and died at San Thome about 1709. He was a succesful quack doctor.

MADRAS HOSPITAL

Stone Medallion and Tablet Showing the date of building of Madras Hospital

Photo.

The Medallion records the foundation of the original hospital at Peddanaickpet Madras, in 1753. The tablet mentions its

removal to a new place in 1772, when the first block of Madras Government Hospital, in the present site, was constructed.

James Anderson (18th Century)

Photo of an engraving.

He was a physician and botanist of 18th century in Madras, and was associated with the Madras General Hospital as a physician and later as member of the Medical Board.

CALCUTTA MEDICAL COLLEGE

The East India Company with a view to restore indigenous medicine in Bengal, along with modern improvements in science, started the Sanskrit college, at Calcutta in the year 1824. This was the first Medical college in India. Both European and Indian systems of medicine were taught in the college. Pandit Madhusudan Gupta was a student of this college, who later became a teacher of the college. Some of the early teachers of this college were, Dr. Tytler (Medicine), & Dr. J. Grant (Anatomy, Physiology, and Surgery).

In 1833, Lord William Bentinck, then Governor General, appointed a committee to review of the whole question of medical education in Bengal. The committee recommended that in the college only one, either the European or the Indian system of medicine, should be taught, but not both systems.

The medical college of Bengal was established in the year 1835 (20-2-1835) with Dr. Bramley as the Superintendent and H. H. Goodeve as his assistant. The medium of instruction was English. It later developed into the present Calcutta medical college.

The early Buildings of the Calcutta Medical College Hospital.

A photo

(a) *Laying the foundation stone of the old medical college hospital, 1848.*

(b) *Old medical college hospital, completed in 1852.*

Dr. H. H. Goodeve :

Photo

He was first an assistant to Dr. Bramley in the Medical College and later became the principal.

Sir Ronald Martin :

He was an Assistant Surgeon to the General Hospital in Calcutta and later became officiating Surgeon of the hospital (1829) and Presidency Surgeon (1830). He was also Surgeon to the Governor General. From 1830 to 1840 he was incharge of the Calcutta Native Hospital. His work 'Notes on Medical Topography of Calcutta' was published in 1837. He left India in 1840 and in 1864 he became the President of the Medical Board at India Office, with the rank of Inspector General. He died in 1874.

Dr. Madhusudan Gupta :

Photo

He was educated in the native medical institution known as Sanskrit College. Later he became one of the teachers of the same college and was transferred to the Calcutta Medical College when the Native Medical Institution was abolished in 1835. He was probably the first Indian teacher, whose students handled bones and dissected human bodies.

Dr. Madhusudan Gupta with his students :

Photo

In the picture, Professor Gupta is shown discussing some points with students.

MADRAS MEDICAL SCHOOL

The Madras Medical School was started in the year 1835 and buildings were constructed for the school in 1836. In the beginning, the Medical School had eleven Indian pupils. The courses of instruction spread over a period of 2 years. In 1850 the school was upgraded into a college. Women students were admitted for the first time in 1875.

Plan of Medical School

It shows the ground plan and front elevation of the Madras Medical School in 1836.

Sir James Annesley :

A photo

He was a surgeon in the Madras General Hospital and a great writer on tropical diseases.

The more prevalent diseases of India :

Photostat copy of the title page of the book.

The book was written by Sir James Annesley in 2 vols. and printed in London. It is a treatise on the causes, nature and treatment of the more prevalent diseases of India, based on the researches of Sir Annesley, illustrated with cases, post-mortem examinations and numerous coloured engravings of morbid structures.

Dame Mary Scharleib :

A photo

She was the first woman student of the Madras Medical College in 1875. She later became a member of the staff. She finally settled down in London, as a consultant in obstetrics.

GRANT MEDICAL COLLEGE and J. J. HOSPITALS, BOMBAY.

The foundation stone for the Grant Medical College was laid by the Lord Bishop of Calcutta in 1843 and it was opened on 23rd November, 1845. The college was named after Robert Grant, a former Governor of Bombay, who took keen interest in starting the medical college. Sir Jamsetjee Jeejeebhoy had offered a donation of Rs. 1,68,000 for the construction of a hospital for the purpose of imparting practical instruction. The East India Company also contributed an equal amount towards the cost of the building, and the building named as Jemsetjee Jeejeebhoy Hospital was opened on 15th May, 1845. Since then, several other structures have come up and the whole complex is now known as J. J. group of hospitals.

Ground plan of grant Medical College and J. J. Hospital.

Photostat copy.

Grant Medical College, (Main Buildings) :

Photo.

The main building was built in 1845 as the college Block.

J. J. Hospital building :

Photo of the hospital building :

This building built in the year 1845, with the generous donation of Sir Jemsetjee Jeejeebhoy, was demolished in 1958.

Sir Jemsetjee Jejeebhoy : (1783–1839) :

Enlargement of the commemoration stamp issued by the P. & T. Department.

He was a Parsi nobleman, who generously donated for the J. J. hospital named after him. He received the first baronetcy in India.

Dr. Charles Morehead, M.D., F.R.C.S.

One of the first three professors of the Bombay Medical College and the first principal, Grant Medical College (1845-59).

HYDERABAD MEDICAL SCHOOL:

The Medical School of Hyderabad was started in the year 1846, at the request of Nizam IV to General Fraser, the British Resident. Dr. William Maclean, the residency surgeon, was appointed as the first Superintendent of the school. He taught with the assistance of Mr. Murray, as translator interpreter. The students had no knowledge of English. This was the first vernacular medical school in India. Dr. Maclean trained 17 young men who passed the examination conducted by eminent medical men and were awarded diplomas or certificates. One of these graduates was Mohd. Ashraf. In 1854, Dr. Maclean left Hyderabad on promotion and Dr. George Smith was appointed as the superintendent. He himself learnt Urdu and began to teach the subject in the vernacular. In 1861, Dr. Smith was succeeded by Dr. Fleming. Due to the keen interest taken by Sir Salar Jung I, and the Nizam V, a teaching Hospital was planned and a seperate Medical Department was created. Dr. Fleming was succeeded by Dr. Pemberton, who was succeeded by Dr. Windowye as Head of the School. Dr. T. Beaumont, who came

after Dr. Windowye was succeeded by Edward Lawrie in 1884-85. The medium of instruction was changed from Urdu to English. Dr. Lawrie's interest, his letters and articles in British journals and experiments at Hyderabad relating to the methods and dangers of chloroform administration led to the appointment by Nizam VI of two chloroform commissions and students of the Hyderabad Medical School were deputed to Britain to demonstrate the safer Hyderabad method of administration. During Lawrie's tenure many students of the school proceeded to Britain to obtain foreign degrees. Dr. Lawrie retired in May 1901. In 1920–21, the Medical School was converted into the Medical College, Hyderabad and later became Osmania Medical College.

Exhibits on Hyderabad Medical School

a. Photo of Nawab Nasir-ud-doula, Nizam IV, who requested the opening of the Medical School.

b. Photo of General J. S. Fraser, British resident of Hyderabad, during whose tenure the school was opened.

c. Photo of Dr. Maclean. Resident Surgeon. First Superintendent of the Hyderabad Medical School.

d. Photo of Siraj-ud-din Shams-ul-Umra, who encouraged and helped boys to join the school.

e. An original painting by Sri R. Sree Gopal, showing Nawab Nasir-ud-doula, Nizam IV requesting the British resident, to start a Medical School at Hyderabad. Dr. Maclean is shown sitting by the side of the resident.

f. An original painting by Sri R. Sree Gopal, showing Dr. Maclean teaching in the Medical School.

g. Mohd. Usruph, one of the earliest medical men trained in Hyderadad Medical School.

h. Faizullah Khan, one of the first batch of pupils, admitted in 1846 and later a prosperous private practitioner of the city.

i. Photo of Sir Salarjung I: who provided employment to the pupils of the Medical School and who sponsored the idea of a public Hospital at Afzal Gunj.

j. Surgeon Major George Smith who succeeded Dr. Maclean as Residency Surgeon and Supdt. of Medical School and reorganised the method of instruction.

k. Photo of the old Hyderabad Medical School building.

l. Photo of Afzal-ud-doula, Nizam V, who gave sanction for starting Afzal Gunj Hospital for the poor.

m. Plan and front elevation of the Afzal Gunj Hospital, of 1866.

n. Photo of the tomb of Pemberton, Superintendent of the Medical School and organiser of new Hospital.

o. Col. Windowye, Superintendent of Medical School (1867-82).

p. Col. Beaumont, Superintendent of Medical School (1882-84).

q. Dr. John Law, who acted as Superintendent of the Medical School many times and gave munificient donation to the hospital.

r. Photo of Nawab Mahboob Ali Khan, Nizam VI who gave continued patronage to Afzal Gunj Hospital and appointed the two Chloroform Commissions.

s. Photo of Surgeon Lt. Col. E. Lawrie, M.B. Supdt. of Medical School and Chairman of the Chloroform Commissions.

t. Photo of Nawab Sir Asman Jah Bahadur, Prime Minister of Hyderabad, who played an important role in setting up the Chloroform Commissions.

u. A group photo of the reception to the first Chloroform Commission.

v. A group photo of the reception to the Second Chloroform Commission.

w. Mrs. Fellows, the first woman lecturer of the Medical School.

x. Dr. Abdul Hussain, student of Medical School under Lawrie-

y. Dr. Miss Gulab Bai Viccaji, (born in 1873,) one of the early native woman doctors, trained in the Medical School.

Honigberger, R.H.

Photo.

He was a German Physician attached to the court of Ranjit Singh in 1834 and was one of the earliest to try Homoeopathy in India.

Dr. Miss Clara Swain M.D.

Painting by Sri M. G. Hussain.

Dr. Clara Swain, was the first American missionary lady doctor who came to India, in 1867. She worked for sometime at Bareli and subsequently at Khetri, in Jaipur. The picture shows her attending the family of an Indian Rajah.

SIR RONALD ROSS (1857–1932).

One of the most eminent medical scientists, who received the Nobel prize in 1902. While serving in the Indian Medical Service at Secunderabad, he discovered the sporozoites of the plasmodium in the salivary glands of Anopheles and thus demonstrated the life cycle of the malarial parasite, in the viscera of the infected Anopheles mosquito, and established a link in the life cycle of the malarial Parasite and supplied proof of malarial transmission by mosquito.

He served in the Indian Medical Service for 18 years and went back to England in 1899 and joined as teacher at the Liverpool School of Tropical Medicine and eventually became the Director of the Institute, in London, named after him.

Exhibits:-

(*a*) *A photo of Sir Ronald Ross.*

(*b*) *The building in Begumpet where Sir Ronald Ross discovered the malarial parasite in the mosquito.*

(*c*) *The Laboratory room of Sir Ronald Ross at Secunderabad.*

(*d*) *A verse written by Ross in joy and gratitude after the discovery.*

(*e*) *A fascimile of the letter written by Ronald Ross to Dr. Patric Manson, after he made the discovery.*

(*f*) *A memorial tablet to Ross in the building where he discovered the malarial parasite in mosquito.*

CHARLES DONOVAN (1863-1951).

Discoverer of Donovan bodies as the cause of Kala-Azar fever.

As a physician of the General Hospital and as professor in the Medical College at Madras, he examined smears of peripheral blood and splenic juice in post-mortem as well as ante-mortem cases of irregular fevers and saw some minute round bodies. He also secured smears of splenic and peripheral blood from endemic areas of Kala Azar in Bengal and found the same microscopic bodies. His findings were confirmed by Ross, Laveran and Leishman. Since Leishman had already found these minute bodies in a Post-mortem film from a case of Dum Dum fever and described them, the bodies came to be known as Leishman-Donovan bodies.

Col. Donovan

(*a*) *A photo.*

(*b*) *Plaster of Paris plaque of the above photo.*

Donovan's Notes:-

Photostat copy of two pages from Col. Donovan's note book.

It shows the notes and sketches he made of the parasitic bodies, found in the blood of various patients.

Post-mortem Report:-

Photostat copy.

This report on a patient in Madras General Hospital, was made by Col. Donovan himself on 26th December, 1903.

Clinical Chart:-

Photostat copy.

This is a chart of temperature of a case under Col. Donovan, at Madars, in June 1905.

DEVELOPMENT OF MODERN MEDICINE IN INDIA

Sl. No.	Year	Important Events
1.	1510 A. D.	Albuqerque — Built in Goa a hospital modelled on Lisbon.
2.	1563	Garcia D'Orta—printed in Goa in 1563 "Simples and Drugs of India".
3.	1600	East India Company Ships with surgeons reached India.
4.	1614	John Woodall was appointed 'Surgeon General,' to East India Company.
5.	1659	Francois Bernier, French physician in India attached to Prince Dara Shikho & Moghul nobility.
6.	1664	Hospitals for soldiers opened in Fort St. George, Madras.
7.	1669-70	Hospital at Surat.
8.	1676	Hospital established in Fort, Bombay.
9.	1684	D'Estermon, Dutch Surgeon to the king of Golconda.
10.	1686	Nicholas Manucci, Italian Physician to Shah Alam. He settled down at Madras as private practitioner.
11.	1693	Johannes Potulet, physician to the Nawab of Carnatic.
12.	1707-08	First ho-pital built in Fort William, Calcutta.
13.	1715-16	Nursing-Matron in Bombay Hospital.
14.	1728	Hospital for Lepers ai Cochin.
15.	1733	New Hospital in Bombay.
16.	1766	New Hospltal at Calcutta.
17.	1769	Hospital for Sepoys at Bombay. Another Hospital at Calcutta.
18.	1772	Building of the hospital in the present site of the Madras General Hospital.
19.	1789	Hospital for Small-Pox at Tellicherry.
20.	1790	First Medical Society in India at Bombay.
21.	1792	First Hospital for natives at Calcutta.
22.	1793	Lunatic assylum—Madras.
28.	1798	Hospital in Madras for indigent native sick.
24.	1809	Native Hospital at Bombay.
25.	1822	First Medical School called Native Medical Institution at Calcutta.

Sl. No.	Year	Important Events
26.	1823	Medical & Physical Society established at Calcutta; Transactions.
27.	1825	Medical Society at Madras.
28.	1830	Opening of the earliest district hospitals in Provinces:
29.	1834	Indian Journal of Medical Sciences.
30.	1835	Medical College started in Calcutta.
		Medical School opened at Madras.
		Bolarum Medical School.
		Trivandrum Medical School.
		Madras Journal of Literature & Sciences.
31.	1837	Quarterly Journal of the Calcutta Medical and Physical Societies.
32.	1838	Calcutta Medical College Hospital.
		Medical & Physical Society of Bombay; transactions.
33.	1839	Madras Quarterly Medical Journal.
34.	1845	Grant Medical Colleg. Bombay.
35.	1846	Hyderabad Medical School.
		Ajmer Medical School.
36.	1848	The India Register of Medical Science. (Half-yearly)
37.	1849	First Indian to take M. D. London.
38.	1850	Madras Medical School raised to status of a Medical College.
		Medical & Physical Society, Hyd'bad.
39.	1851	Madras Journal of Medical Sciences.
40.	1853	Agra Medical School.
41.	1854	Indian Annals of Medical Sciences
42.	1860	Lahore Medical School.
		Vepery Medical School, Madras.
		Madras Quarterly Journal of Medical Sciences.
43.	1865	Bengal branch of British Medical Association.

Sl. No.	Year	Important Events
44.	1866	Indian Medical Gazette.
45.	1867	Nagpur Medical School.
46.	1868	Calcatta Journal of Medicine (Homoeopathy).
47.	1869	Madras Monthly Journal of Medical Sciences.
48.	1870	Madras Medical Book Society.
49.	1874	Patna Medical School.
50.	1876	Medical Schools at Cuttack and Nellore
51.	1878	Indore Medical School.
52.	1880	Calcutta Medical Society, Transactions.
53.	1883	Tanjore Medical School. South Indian branch of British Medical Association. Transactions.
54.	1884	Scientific Memoirs of Medical Officers of the Indian Army.
55.	1885	Foundation of Dufferin Fund for Women Medical Service. Dindigul Medical School. Gosha Hospital for Women & Children —Madras.
56.	1889	Bombay branch of British Medical Associaton.
57.	1890	Indian Medical Record.
58.	1892	Medical Register & Directory, Medical Reporter (later Indian Lancet).
59.	1893	Indian Medico-Chirargical Review.
60.	1895	"Medical Missions in India" (Journal) Ludhiana Medical School for Women.
61.	1897	Ronald Ross discovers mosquito transmission of Malarial Parasite. W. Haffkine, the Bacteriologist. prepares Anti-Plague Prophylactic Vaccine.
62.	1900	Calcutta Medical Club.
	1902	Vizagapatnam Medical School.
63.	1903	Donovan discovers microorganism of Kala-Azar.
64.	1905	Foundation of Lucknow Medical College.

APPENDIX I.

OTHER EXHIBITS IN THE MUSEUM.

(not listed in the Guide)

A. Exhibits prepared by the Museum.

1). Plaster of paris statue of Dhanwantari (in show case).

2). Medicine—Man (Drug pedlar) of the present day in India. (Kondapalli Doll).

3). Rolling chart, showing in longitudinal columns, the important events in Medical History in different ancient civilisations, Egypt, Assyria, China, Greece and India from 3000 B.C. upto 800 B.C.

4). Map of the world showing the transmission of Ayurveda to different continents and countries in ancient and early medieval times.

5). All-glass cabinet (with shelves) exhibiting cards with drawings of surgical instruments drawn according to descriptions of Susruta.

6). **Printed and framed charts :**

Medical Ethics in Ancient India from Kasyapa Samhita: Medical Ethics in Ancient India from Charaka, etc.

B. Coloured Prints collected from other sources.

I. From Dey's Medical Stores (Manufacturing) Pvt. Ltd., Calcutta-16—2 prints.

II. Arsharasayana Sala, Muktyala, A.P. — 2 prints.

III. Chemo-Pharma, Calcutta—6 prints.

APPENDIX II

THE MUSEUM PARTICIPATED IN THE FOLLOWING EXHIBITIONS.

1. Exhibits were loaned to Indian Medicine Department, Hyderabad, for an exhibition in All India Industrial Exhibition, 1964, Hyderabad.
2. Selected exhibits were arranged in the All India Industrial Exhibition, Hyderabad, in 1965 & 1966.
3. Colour photographs and special charts relating to Medical Education in ancient India were prepared for the Indian Medical Association, Delhi and exhibited at the III World Medical Education Conference in Delhi in November, 1966. These were handed over to I.M.A. Delhi.
4. Exhibits were loaned for an exhibition for the conference of Indian Medical Association, Mysore State Branch, held in Bangalore, 1968.
5. An exhibition was arranged in October 1970, at Tirupati, in connection with the Seminar - cum-Workshop on History of Medicine, sponsored by S. V. University and U. G. C.

THE MUSEUM SUPPLIED COPIES OF PICTURES TO THE FOLLOWING INSTITUTIONS.

1. Some photogrphs supplied to Hamdard Institute of History of Medicine, Delhi.

2. Dr. Dwarakanath, Adviser on Indian Systems of Medicine, Ministry of Health, was supplied with colour prints, photos of exhibits and a sculpture of Dhanwantari for presentation to Semashko Medical History Institute in the Academy of Medical Sciences, Moscow - U. S. S. R.

3. A set of slides of paintings and pictures was given to Prof. N.K. Keswani, All India Institute of Medical Sciences, New Delhi.

4. Copies of exhibits in the Museum were also supplied to Dr. Lakshmipathi Museum of History of Medicine, Madras.

5. A complete set of the photographs of the exhibits was supplied to Sri Venkateswara Medical College, Tirupati.